SECRETARY'S TASK FORCE ON COMPETITION IN THE U.S. DOMESTIC AIRLINE INDUSTRY

Pricing

Volume I

Table Number Page

INTRODUCTION

This analysis, which focuses on pricing in the domestic airline industry, is the second in a series of studies which are intended to provide an information base to assess the state of competition in the domestic airline industry. Like the Industry and Route Structure section of the study, the Pricing section is designed to be both a source document, providing detailed information on the state of pricing competition in the industry, and an analytical study. Also, as in the Industry and Route Structure section, the primary emphasis is placed on the years 1979, 1984 and 1988.* This enables us to confirm competitive implications raised in the service phase of the study.

The pricing phase is divided into four parts. Part I addresses the general fare level and structure. Specific attention is paid to the effects of numbers of competitors and market shares, in addition to the effects of distance and density, which are the primary determinants of price. Also analyzed is how hubbing affects price, including a comparison of local and connecting fares at concentrated hubs, and whether concentration affects the availability of discount fares.

Part II provides a detailed comparison of fares and yields, by hub size, based on the FAA classification of hubs as large, medium, small, or nonhubs. This analysis stems from often heard suggestions that fares in smaller cities have increased greatly relative to fares in larger cities.

Part III is an analysis of the relationship of fares to exit and entry of competitors. This flows from concerns raised in the Industry and Structure phase which shows that in many large hub-to-hub markets nonstop competition is limited to carriers that hub at one or the other end point of the city pair. This implies that the same carriers will compete in such markets over extended periods of time and raises the question of whether price accommodation is more likely in he absence of entry, particularly in short-haul markets where on-line connecting service generally does not play a major role.

Part IV is a brief review of revenue management systems widely used by the domestic airlines in recent years and the competitive implications of those systems.

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* The primary data base used to analyze carrier price behavior is the Passenger Origin-Destination Survey (O&D survey). The O&D survey provides detailed quarterly information on passenger origins and destinations, flight itineraries, carriers flown, fare codes, and dollar values paid. It is based on a continuous 10 percent sample of passenger ticket coupons lifted by large certificated carriers.

Summary of Findings

Analytical Results in Brief

A comprehensive review of pricing data for the domestic airline industry for 1988 and earlier periods leads us to conclude that the fundamentally competitive nature of the industry has not been changed in recent years. Changes in the fare structure have occurred, brought about in large part by the shift to hub and spoke systems, and not all market segments have been affected in the same way. The stability inherent in hub and spoke systems has reduced the intensity of price competition in many short-haul local markets but the proliferation of hub and spoke systems appears also to have intensified the benefits of price competition for the vast majority of travelers.

The most widely used measure of average fare level for the airline industry is average yield or passenger revenue per passenger mile flown. This measure accounts for changes in both fares and passenger trip distance. An analysis of average domestic yield over the long-term and by detailed city-pair market characteristics reveals the following:

o   The long-term decline in inflation-adjusted yield that began in 1982 after the energy crisis generally continued through 1988. Although deflated yield increased somewhat in 1988 over 1986 and 1987 levels, the increase was not large and was well within the range of year-to-year variations of the past.

o   Without an adjustment for inflation, yields for 1988 were below 1984 levels but were up 11.1 percent over 1986 levels; however, the airlines' domestic passenger costs per available seat mile were up by 11.3 percent over the 1986-1988 period.

o   The above suggest that, overall, prices in the domestic airline industry continue to be competitively determined.

o   Measured against the "Standard Industry Fare Level" (SIFL) which is the Civil Aeronautics Board pre-deregulation fare formula adjusted for cost increases, average yields in 1988 were higher in short-haul markets and lower in long-haul markets.

o   Since regulated fares were intentionally set to
        underprice short-haul markets and overprice long-haul
        markets, the upward shift in short-haul fares is
        consistent with a cost-based, competitively-determined
        fare structure.

o   In 1988, yields* were generally higher in monopoly
        markets (defined as city-pair markets where the second
        biggest carrier has less than 10 percent of the traffic)
        than in competitive markets. This was generally true
        regardless of market distance and market passenger
        density. The premium paid by passengers in monopoly
        markets generally declined as market distance increased
        and averaged 14.0 percent for 698 monopoly markets in
        the analysis. (Only 10 percent of domestic revenue
        passenger miles were accounted for by monopoly markets
        in 1988.)

o   The premium paid by passengers in local markets in 1988
        at the eight most highly concentrated hubs (where one
        carrier had more than 75 percent of the enplanements),
        when compared to the remainder of the domestic markets
        of similar distance and size were generally highest in
        short-haul dense markets, and averaged 18.7 percent.
        Local traffic in the short-haul, dense markets at these
        eight highly concentrated hubs accounted for 4.1 percent
        of the domestic revenue passenger miles in 1988.

o   Fare premiums at the same eight hubs are not a recent
        phenomenon. In 1984 the premiums averaged 23.4 percent.

o   Fare premiums at eight additional hubs where two
        carriers had a dominant share of more than 70 percent
        were generally much lower, averaging 8.9 percent in 1988
        and 12.5 percent in 1984.

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* Since the data are for one point in time and analyzed by
mileage block, the relationship between fares and yields is
constant and the findings apply equally to both fares and yields.

o   To assess whether market structure (i.e., number of
     competitors) influenced the availability of discount
     fares, the 1988 distribution of fares was compiled for
     monopoly, two carrier, 3 carrier and 4 or more carrier
     markets. The distribution for monopoly markets showed a
     much lower proportion of discounts; the distributions
     did not differ materially among the competitive
     categories.

o   The average dominant carrier yields for local markets of
     various distances at four concentrated connecting hubs
     were compared to the same dominant carrier's non-stop
     yields for connecting service over those same hubs. The
     results for three hubs showed that where markets of
     comparable distance could be compared -- roughly above
     500 miles -- there was no discernible difference between
     local yields and connecting yields for the same
     distance. At the fourth hub, Charlotte, the most
     concentrated hub in the nation, local fares were
     consistently higher than connecting fares in the 400 to
     1,000 mile range. This lends support to the notion that
     very high hub concentration leads to high local fare
     premiums.

A compilation of average yields for 474 domestic points for the
years 1979, 1984 and 1988 showed the following:

o   Average domestic yields increased between 1979 and 1988
     for all FAA hub classes -- large, medium, small and
     nonhubs -- due mainly to high fuel cost increases in
     1980 and 1981. Between 1984 and 1988, however, average
     domestic yields decreased 6.2 percent, or 1.6 percent
     per year and all hub classes had decreases in average
     yields. Small hubs and nonhubs had larger decreases
     than large and medium hubs in recent years.

o   Yield increases over the 1979-1988 period were well
     below the trend of national price level changes as
     measured by the Consumer Price Index or the GNP Implicit
     Price Deflator. Over the 1984-1988 period average
     domestic yields based on nonstop market mileages were
     down 6.2 percent while the CPI was up 13.9 percent.

One of the conclusions reached in the companion industry structure
study was that the hubbing process tends to encourage carriers to
expand by extending their dominance (i.e., entering new city-pair
markets to and from their already-dominant hubs), or by creating
new hubs, rather than by competing at each other's hubs. This
suggests that new entry is less likely to occur in city-pair
markets involving concentrated hubs and raises the prospect that,
in the absence of new entry, existing competitors in such markets
will not compete vigorously over time.

The relationship between changes in fares to entry and exit of
competitors was tested with a detailed analysis of short-haul and
long-haul dense markets. This analysis leads to the following
findings:

o   Fares have a strong tendency to decline when new entry
     occurs and to increase either when exit occurs or when
     the same carriers compete for more than relatively short
     time spans.

o   This tendency is just as strong at two-carrier hubs
     despite the presence of an additional hubbing
     competitor.

o   Competition for market share following new entry appears
     to be an important pricing discipline.

o   In dense, shorter-haul city-pair markets involving
     connecting hubs, 1988 fares tend to be somewhat lower
     than 1984 fares, consistent with trends in overall
     average yields, but, at the same time, were on average
     20 percent higher than the lowest post-1984 fares which
     had declined as a result of competitive entry.

o   Fares in dense long-haul city-pair markets tend to be
     adequately disciplined by on-line connecting services
     even in the absence of large scale entry by competitors.

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Increasingly in recent years, airlines have been developing and
using highly sophisticated computer programs, known as revenue
management systems (RMS), to help manage their seat inventories.
Some have argued that these systems are anticompetitive. A review
of the literature and information about these systems and their
operation, however, suggests the opposite conclusion, i.e.,
revenue management systems are procompetitive.

Part I

INDUSTRY FARE LEVELS AND FARE STRUCTURE

Part I reviews the general fare level and structure in the three periods chosen for analysis, calendar years 1988, 1984, and 1979. Specific attention is made to the current (1988) structure with regard to the effects of differing market shares and number of competitors on yield, as well as the effects of passenger density and market distance. Carriers with at least a ten percent market share are considered to be competitors. Yield and fare level at single-carrier concentrated hubs, multi-carrier concentrated hubs, the hubs used by the General Accounting Office in its recent study of concentrated and unconcentrated hubs, and monopoly markets in total are compared to industry totals.

The distribution of passenger fares about the average market fare is examined by market competitive class and hub concentration to determine whether any structural difference exists between competitive and non-competitive markets. A comparison of local and connecting fares at four selected concentrated hubs is made to determine the contribution of local and connecting passenger revenue to total hub revenue. Individual carrier market shares and the contribution of those market share classes to a carrier's total revenue are presented, with the average fare compared to a standard fare. The carriers' passengers by market share are also shown. Data from which all graphs, tables, and conclusions are drawn are included as separate tables in the second volume of this study.

A.   The Historic Trend in Price

The price of air travel is generally measured in one of two ways. Either the average passenger fare is compared from one period to another, or the average price per mile is examined. Since comparisons of the average fare are affected to a great degree by changes in flown distance, the average fare per mile, or yield, is generally used for time-series comparison purposes. The chart on the next page shows the average yield, in current (nominal) and constant dollars (adjusted for inflation) from 1950-1988. Data are from Table I-1.

INDUSTRY AVERAGE FARE PER MILE, 1950-1988
In Current and Constant Dollars (1967=100)

Calendar Years
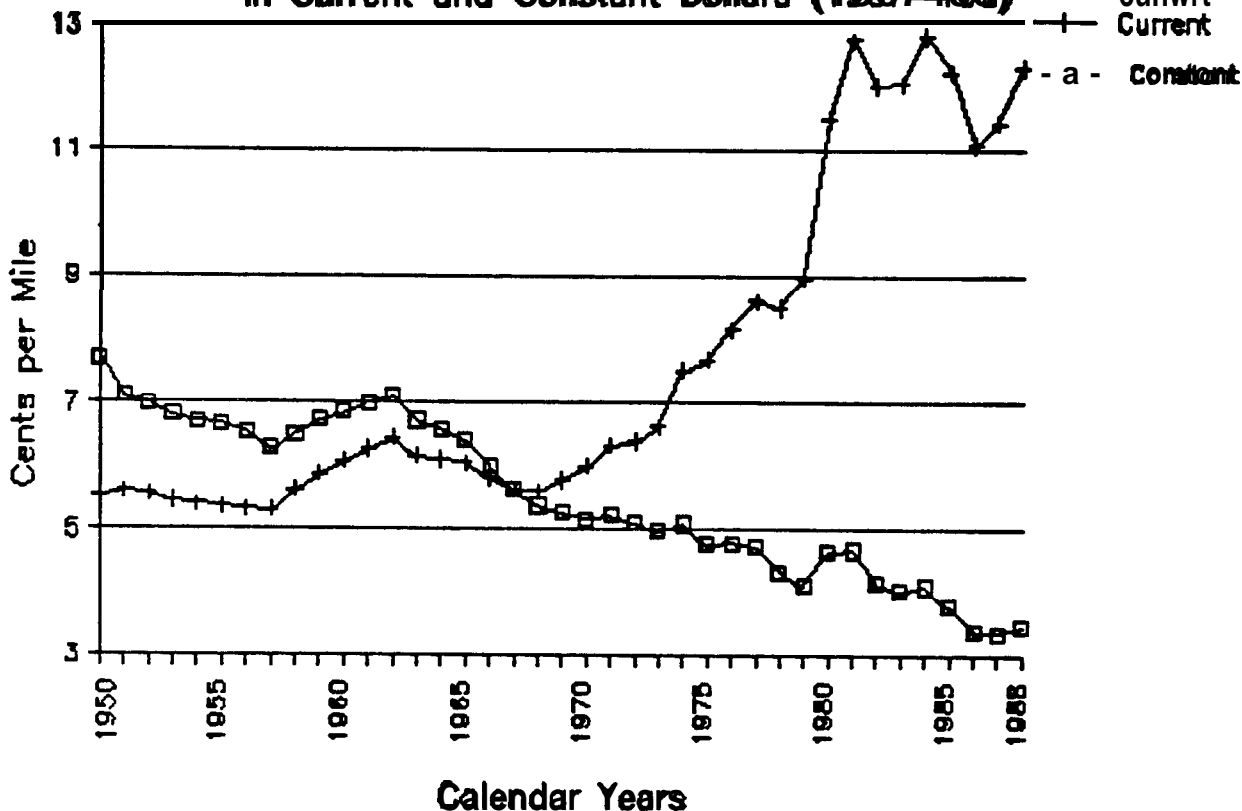
As indicated, historic constant-dollar fares have continued their long-term downward trend. Sharp increases in current dollar yield in the 1980-1982 period primarily reflected the sharp run-up in fuel price, and the traffic mix changes in the early 1980's due to the recession induced dampening of discretionary passenger travel. As a consequence, constant dollar yields increased sharply for the first time since the early 1960's. After the price of fuel declined to more historic relationships, and the economy recovered, constant dollar yield returned to its longer-term trend.

The relationship of airline costs, measured by passenger cost per available seat-mile, and yield over time can be examined through a comparison of Standard Industry Fare Level (SIFL) cost index and a constructed index of yield. The establishment and periodic adjustment of the SIFL was required by the Airline Deregulation Act to provide a '"zone of reasonableness"' for domestic fares during the transition to total fare deregulation. (A further description of the SIFL rates and methodology is contained in Table I-2.) The chart below shows the SIFL cost adjustment (from its base of July 1977), and the index of actual domestic yield.

S.I.F.L. AND YIELD INDICES
July 1977= 1,00

Effective Date
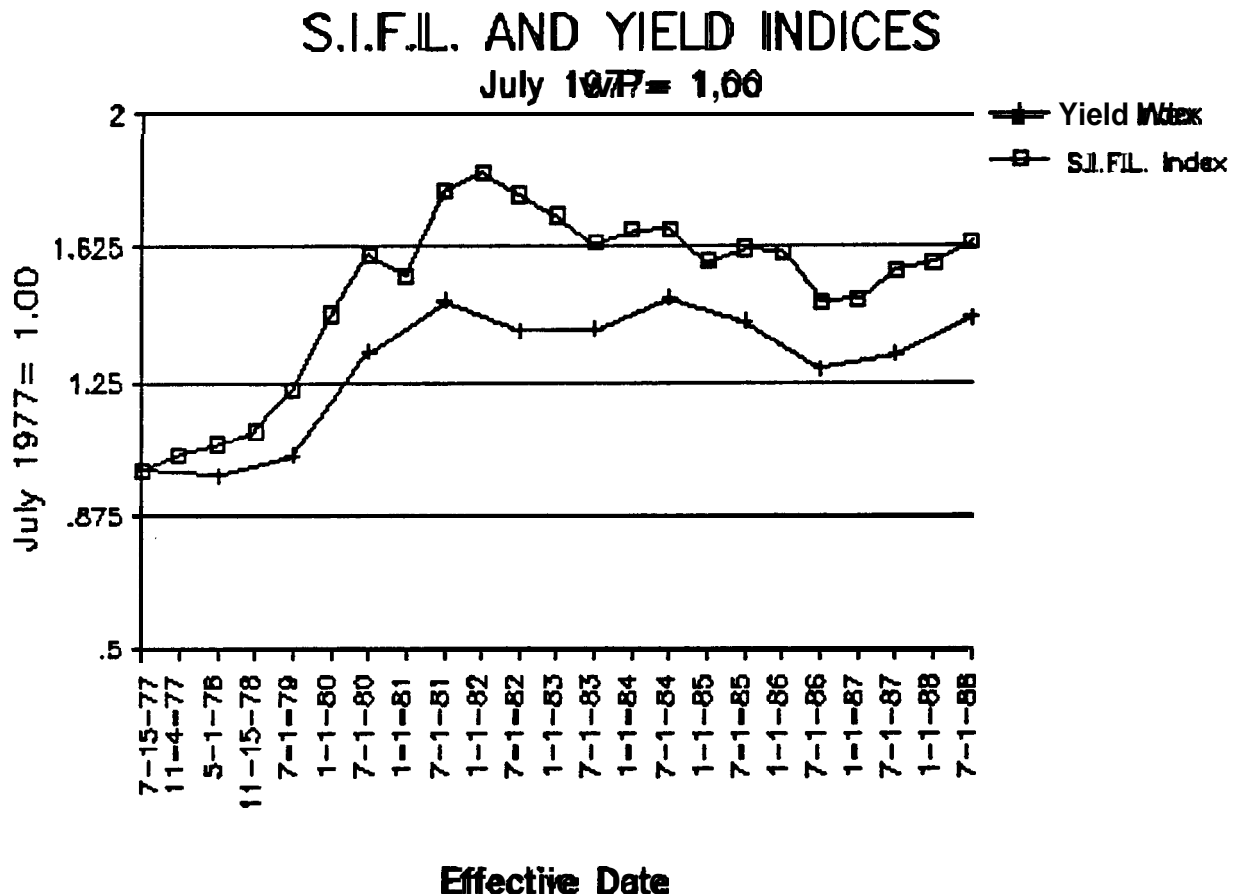
The actual industry passenger cost per seat mile for both fuel and non-fuel elements at six month intervals is shown on the following page, along with actual yield (on an annual basis). Data are in current dollars. Indexing the total cost and fuel and non-fuel components shows the magnitude of the fuel cost increase and subsequent decline.

The SIFL is used as a reference point, both because of its historic use as a benchmark and its general acceptance as a reasonable measure of the cost of passenger service.

THE S.I.F.L. AND THE S.I.F.L. FUEL
AND NON-FUEL COST COMPONENTS

Legend: S.I.F.L Factor, Fuel Index, N-Fuel I ndex

y-axis: July 1977= 1.00
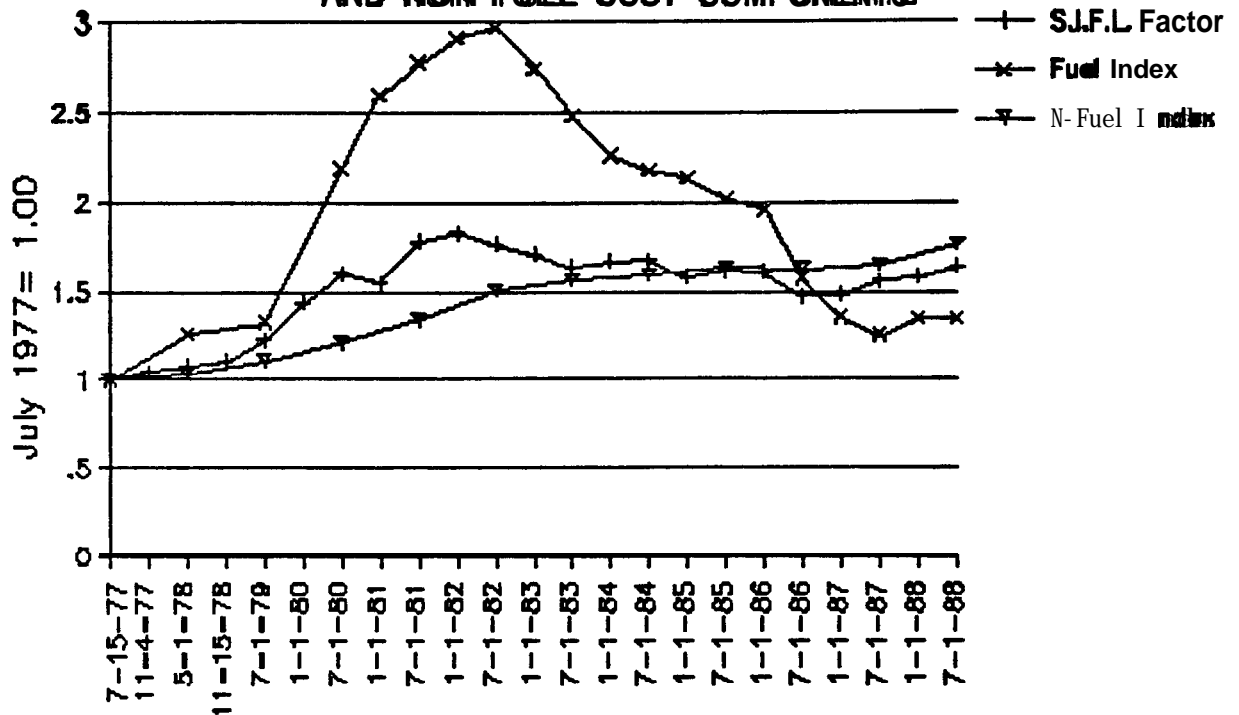
YIELD PER PASSENGER-MILE AND S.I.F.L.
Cost per Seat-Mile

Legend: Fuel/ASM, N-FF/ASM, Yield/RPM, Tot Cst/ASM

y-axis: Cents per Mile
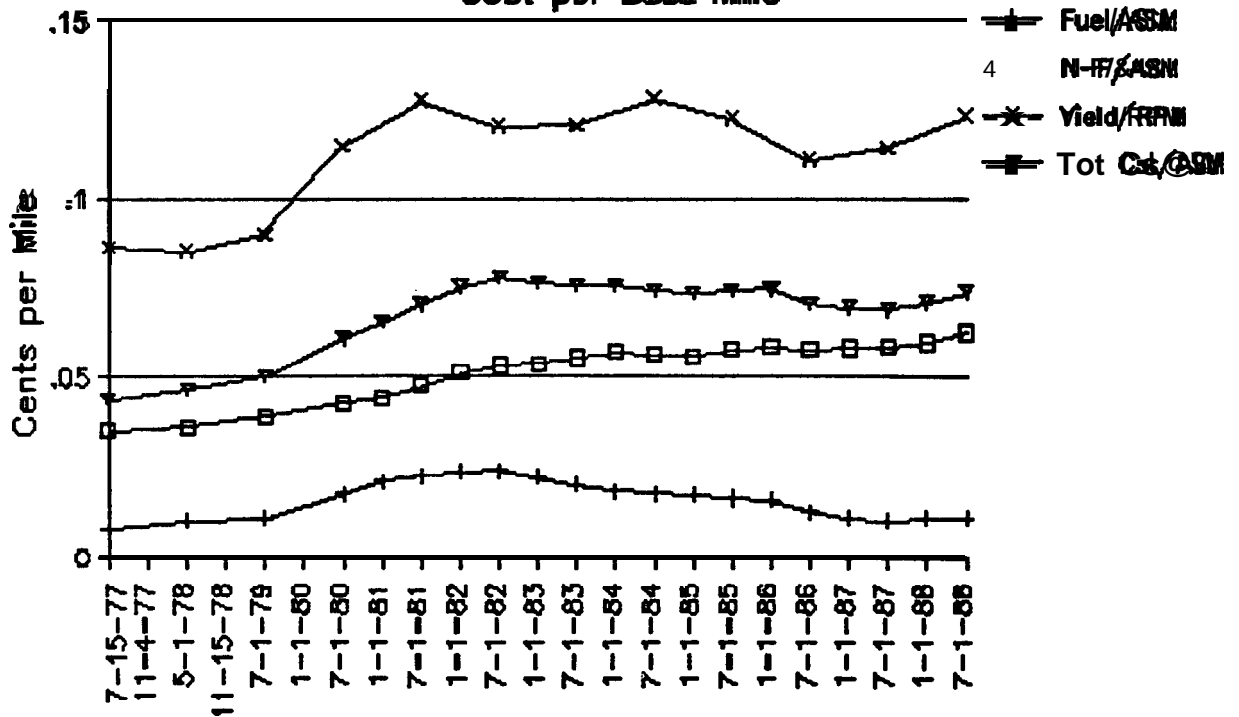
Effective Date

B. **The Structure of Fares by Distance, Passenger Density and Competitive Status**

The comparison of average industry cost and yield indices over time is a good, general indicator of industry performance. In a competitive environment we would expect yield to approximately track unit costs, and the preceding charts show that yield and cost show the same general tendencies. Yield is also affected by other factors, however, such as distance, traffic density, and degree of competition. The study of these factors requires additional data, which are collected as part of an ongoing ten-percent sample of passenger ticket coupons, and known as the Origin-Destination Survey of Airline Passenger Traffic (Survey).

B. 1. **Background, Data Sources, and Definitions**

The Survey is a 10 percent sample of all ticket coupons, the ticket selected if it ends in zero. As with all samples, the smaller the sample, the larger the sample error. To limit potential sampling error, all markets with less than 700 sample tickets (about one sample passenger per day in each direction) were excluded. Before minimum market size limits were imposed, the sample data were filtered for maximum ticket price, using GAO's developed fare screen (see Air Fares and Service at Concentrated Airports, General Accounting Office, GAO/RCED-89-37).

No minimum ticket price limits were imposed, although prices for frequent flyer coupons or other reduced-fare journeys could be as low as $1.00 (if a ticket price were included at all).

The rationale for inclusion of these low-fare tickets is straight-forward. If one buys X-amount of transportation and receives X+Y amount, the average price per unit (which is reflected in the carrier's reported yield) is that of X+Y. Those portions of international journeys that are identifiable as separate-ticket domestic journeys are excluded. All data for Alaska, Hawaii, and other non-contiguous 48-state data have also been excluded.

For 1988, about 24,500 small origin-destination markets did not meet the 700 sample passenger lower size limit. The remaining 3,674 market-pairs were analyzed. See Table I-26 for a count of market-pairs by distance and density for each of the three selected years.

All individual carrier data in the selected markets are included
in the data base, and sum to the market total. Markets were
determined to be monopoly, 2 carrier, 3 carrier, and 4 or more
carrier markets by the count of the number of carriers which held
at least a 10.0 percent market share of passengers. For example,
a market could be classified as "monopoly" even if the dominant
carrier had only an 80 percent market share, so long as no other
carrier had a 10 percent market share.

Market-pairs were grouped into seven distance intervals, and five
density intervals (in terms of passengers per day.) The distance
and density intervals used in this section of the study are
consistent with those of the companion study of industry
structure.

B. 2. a. <u>Average Yield By Distance Interval Compared to the
SIFL Average Yield</u>

The SIFL is a reasonable benchmark for examining the relationship
of regulated fares to unregulated fares. The graphs on the
following page compare the average industry yield by mileage
interval to the SIFL for 1988, 1984, and 1979. The 1979 graph
also includes the actual cost taper for nonstop operations in
1979. Several observations can be made from the graphed data.
(Data are from Table I-3.)

First, with the exception of mileage below 750 miles in 1988 and
the 501-750 mileage interval in 1984, all fare averages are below
the SIFL for all three years. This should not be unexpected,
since the SIFL is basically the CAB's D.P.F.I. fare level for
unrestricted full-fare coach travel in 1977, updated for cost
increases. 1/ 1984 short-haul data are also affected by People
Express' incorrect reporting of its passengers connecting over
Newark as Newark passengers. Removal of People's data from the
industry increases the 1984 short-haul results to slightly over
the SIFL.

1/ The average full-fare in 1977 was approximately 15% below the
formula rate, since considerable "full-fare" travel was done under
night coach, military, or children's rates, which were considered
full fare. The SIFL, being based on the <u>Domestic Passenger Fare
Investigation</u> fare formula, also under-prices (relative to cost)
the short-haul fares (less than 500 miles) and over-prices the
longer-haul fares.

1979 AVERAGE YIELD BY DISTANCE INTERVAL
Compared to the S.I.F.L and Cost Taper
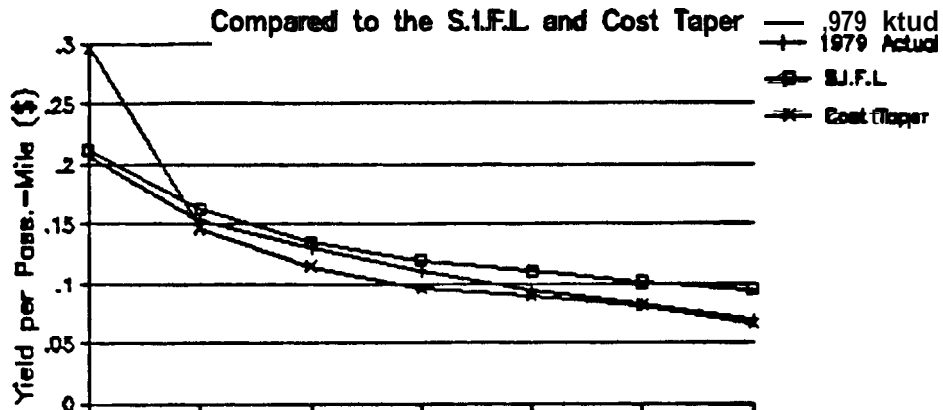
1984 AVERAGE YIELD BY DISTANCE INTERVAL
Compared to the S.I.F.L

1988 AVERAGE YIELD BY DISTANCE INTERVAL
Compared to the S.I.F.L
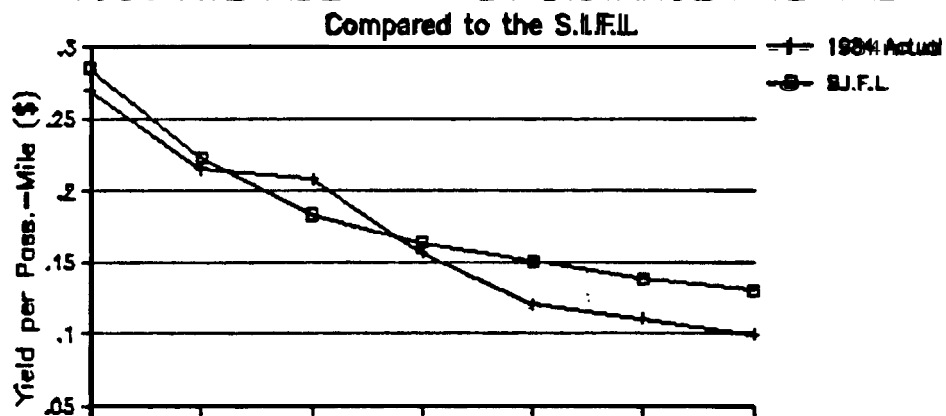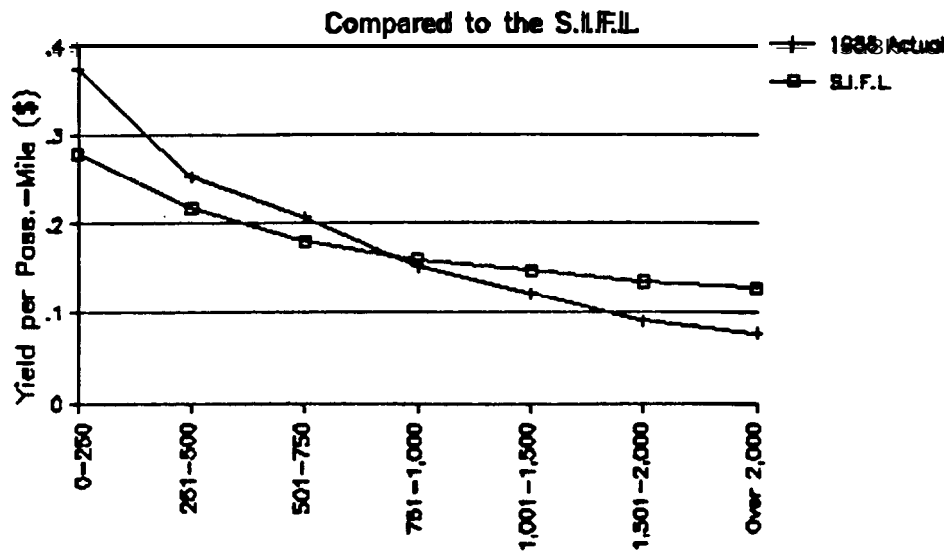
Distance Intervals (Miles)

The freedom to set price has seemed to have corrected the
deliberate under-pricing of short-haul fares implicit in the SIFL,
since 1988 short-haul fares are now above the SIFL. The
differential for selected mileage blocks in each year between the
SIFL and actual fare is shown below:

Distance Interval		Ratio of Average Fare to SIFL		
		1979	1984	1988
0-250	Avg. Dist.	191	197	197
	Avg. Fare	$39.61	$53.16	$74.02
	SIFL	$40.61	$56.22	$55.09
	Ratio	.952	.946	1.344
750-1,000	Avg. Dist.	882	878	881
	Avg. Fare	$97.58	$137.61	$134.22
	SIFL	$105.76	$143.80	$141.10
	Ratio	.923	.957	.951
Over 2,000	Avg. Dist.	2,364	2,380	2,363
	Avg. Fare	$164.27	$235.56	$181.15
	SIFL	$225.79	$309.39	$301.18
	Ratio	.728	.761	.601

Source: Table I-5.

Table I-5 additionally shows that the long-haul distance interval
(1,501-2,000 miles) average fare/SIFL ratio has also declined
markedly from 1984 to 1988, from .797 to .671.

While the frequent flyer coupons retained in our fare analysis
would most likely be used in these long-haul markets and account
for some of the reduction in the fare/cost ratio, it seems clear
that competitive pressures in these markets are keeping fare
levels low relative to cost. (An overpricing of about four
percent was included in the SIFL base (1977) fare; D.P.F.I.,
Docket 21866-9, Fare Structure, Order 84-12-109.)

B. 2. b. **Average Yield by Competitive Status,**
          <u>Compared to the SIFL</u>

Comparing the yield by distance by competitive status in 1979,
1984, and 1988, on the next page, (the number of carriers with at
least a ten-percent market share) indicates that overall yield
declines with distance, but also that within each mileage interval
the more concentrated markets tend to have a higher yield, with
yield generally declining as the number of competitors increases.
Data by competitive status are shown in Table I-4.

In 1979 the SIFL was above all average yield categories. In 1984
monopoly and 2 carrier markets were above the SIFL for distances
up to 750 miles, and about even in the 251-1,000 mile category.

In 1988, with the exception of 4 carrier markets in the first two
distance intervals, all yield categories were above the SIFL
through 750 miles. In the long-haul markets the differential
between the SIFL and the actual average yield widened signifi-
cantly in the 1984-1988 period. Note that the scales on the three
charts differ, such that the same visual difference means an
increase in the yield differential.

1979 AVERAGE YIELD BY DISTANCE INTERVAL
And Competitive Status

1984 AVERAGE YIELD BY DISTANCE INTERVAL
And Competitive Status

1988 AVERAGE YIELD BY DISTANCE INTERVAL
And Competitive Status

Distance Intervals (Miles)
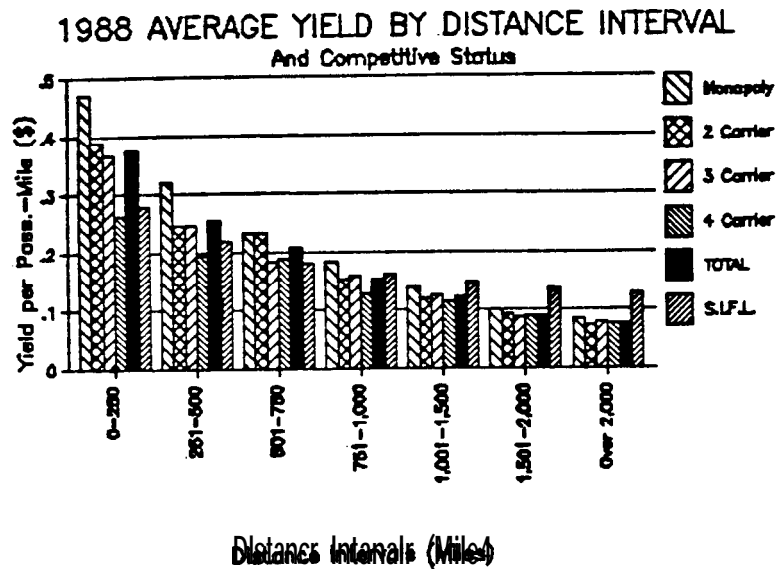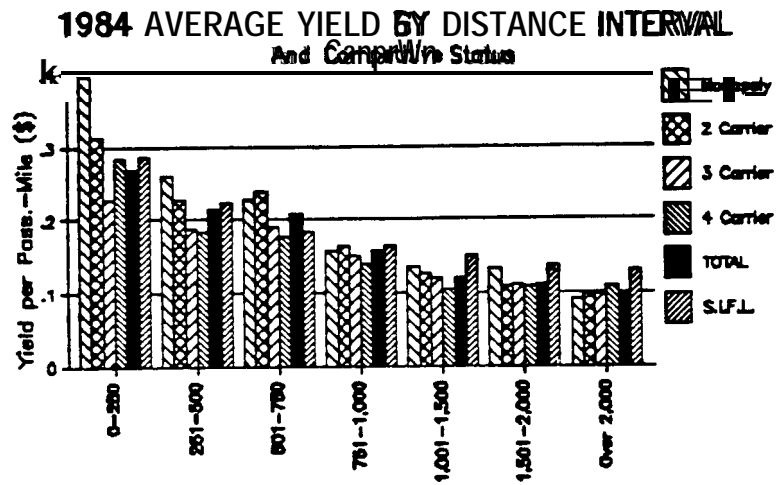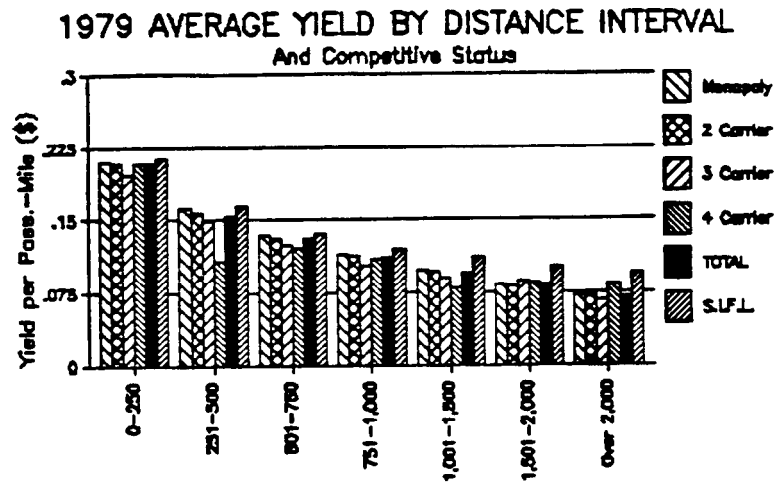
B. 3. <u>Yield and Fare Differentials at Concentrated Hubs</u>

To this point, our analysis has evaluated competitive status in
terms of the number of competitors in market-pairs. Considerable
interest and concern has been raised about fare levels and
competition at specific cities, where individual carriers have
developed hub complexes and enplane a high percentage of the
passengers. The following analysis compares average yield and
constructed fare by distance, for the total industry (all city
pairs), and for single-carrier concentrated hubs (market-pairs for
cities in which one carrier enplanes more than 75 percent of the
passengers) 2/ and for eight additional two-carrier concentrated
hubs. 3/.

Hubs are here considered to be concentrated for each of our three
comparison years based on their status for the twelve months
ending December 1988. (In 1984, only Charlotte, Atlanta, and El
Paso met the 75 percent criterion.)

B. 3. a. <u>Yield by Distance Interval and Hub Concentration</u>

The following page shows the actual yield at 1 and 2-carrier
concentrated hubs compared to the industry average for each
distance interval.

In 1979 only minor differences in yield are evident, fares being
controlled within certain flexibility limits by the formula rates
set by the CAB or required under the SIFL. Fares were completely
deregulated January 1, 1983.

The data for 1984 show that both 1 and 2-carrier concentrated hub
yields were significantly above the industry average, showing a
pattern similar to that shown in 1988. These hub classifications,
however, are based on the hub concentration level in 1988. The
actual 1984 concentration level was some 20 percentage points less
in 1984. (About 60 percent in 1984, about 80 percent in 1988.
See Section C.2.)

There are scale differences in the graphs; 1984 yields were
significantly higher than 1979 due to increases in cost. The 1988
scale is similarly compressed, due to the marked increase in the
yield in the 0-250 mileage interval.

2/ These cities are Minneapolis/St. Paul, Charlotte, Pittsburgh,
Dayton, St. Louis, Salt Lake City, Cincinnati, and Memphis.
3/ These cities are Atlanta, Houston, Dallas, Denver, Raleigh/
Durham, Nashville, Chicago, and El Paso.

YIELD AT CONCENTRATED HUBS AND IN TOTAL
By Distance Interval, C.Y. 1979
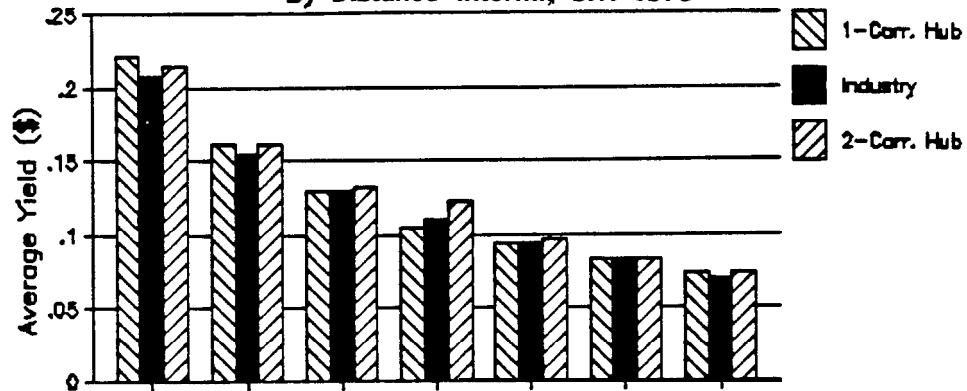
YIELD AT CONCENTRATED HUBS AND IN TOTAL
By Distance Interval, C.Y. 1984
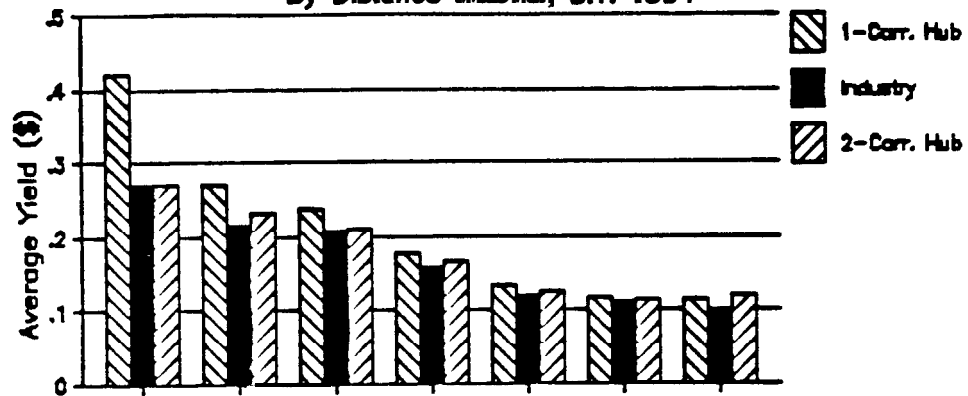
YIELD AT CONCENTRATED HUBS AND IN TOTAL
By Distance Interval, C.Y. 1988
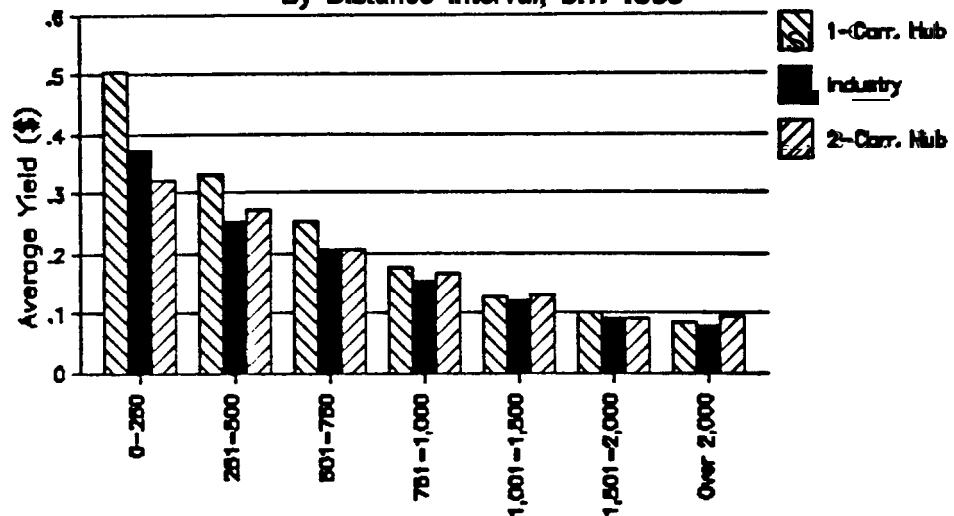
Distance Interval

B. 3. b. Fare Differentials by Distance Interval
and Hub Concentration

The preceding page shows the yield differential by distance and
hub concentration. Since yield does not show the dollar fare
differential for any category, we constructed the fare difference
by multiplying the 1 and 2-carrier hub yield, by distance
interval, by the industry average distance for that interval. All
three groupings would then have a directly comparable fare at the
same average distance. These graphs are shown on the following
page.

Again, 1979 differentials are small, due to the vestiges of fare
regulation. In 1984 the fare differentials for 1-carrier
concentrated hubs are quite significant, particularly for under
1,000 miles. In 1988 these differentials generally increase,
except the actual fare level in the intervals over 1,500 miles
decline. Note again the scalar differences.

The dollar differential by distance interval for each year is
shown below. The "Other" category in 1988 represents all large
hubs that are not 1 or 2 carrier concentrated hubs.

Fare Differential by Distance Interval-
Concentrated Hub Fare, Less Industry Fare

Distance	1979		1984		1988		
Interval	1 Carr	2 Carr	1 Carr	2 Carr	1 Carr	2 Carr	Other
0-250	$ 2.66	$ 1.25	$30.02	$ 0.05	$25.54	$ -10.88	0.32
251-500	$ 2.74	$ 2.68	$20.18	$ 6.12	$28.20	$ 6.42	-8.09
501-750	$-0.54	$ 1.26	$18.58	$ 1.45	$27.40	$ -0.07	-7.52
751-1000	$-4.90	$10.36	$19.01	$ 8.08	$21.00	$ 12.77	-4.51
1001-1500	$ 0.54	$ 2.82	$16.08	$ 4.87	$ 7.42	$ 12.08	-1.33
1500-2000	$ 0.76	$-0.14	$12.95	$ 7.38	$18.15	$ -0.20	-2.58
Over 2000	$ 7.95	$ 8.91	$38.68	$46.96	$20.28	$ 42.95	-0.42
Total	$80.61	$ 3.24	$19.61	$ 4.78	$22.38	$ 4.72	-3.82

Source: Tables I-6, 7, 8.

The direct comparison of yield and concentration by distance
interval alone can be misleading, however, since the effects of
market density are not measured. For example, the table above
shows a $25.54 fare differential in the 0-250 distance interval
between the fare charged in single-carrier concentrated hubs and
the industry average fare. However, below 250 miles, 62 percent
of the industry passengers are in the density class of over 500
passengers per day, while none are in that density interval for
the single-carrier concentrated hubs.

IND. AND CONSTR. FARE AT CONCEN. HUBS, 1979
Using Industry Distance, And Actual Yield

Legend:
- 1-Carr. Hub
- Industry
- 2-Carr. Hub
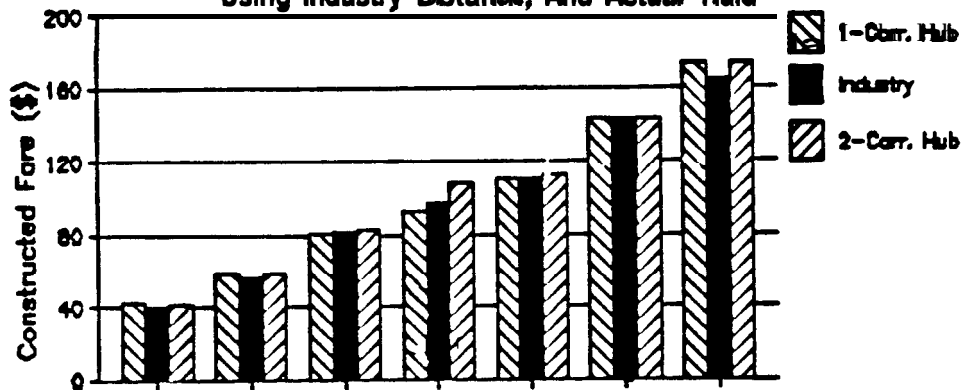
IND. AND CONSTR. FARE AT CONCEN. HUBS, 1984
Using Industry Distance, And Actual Yield

Legend:
- 1-Carr. Hub
- Industry
- 2-Carr. Hub
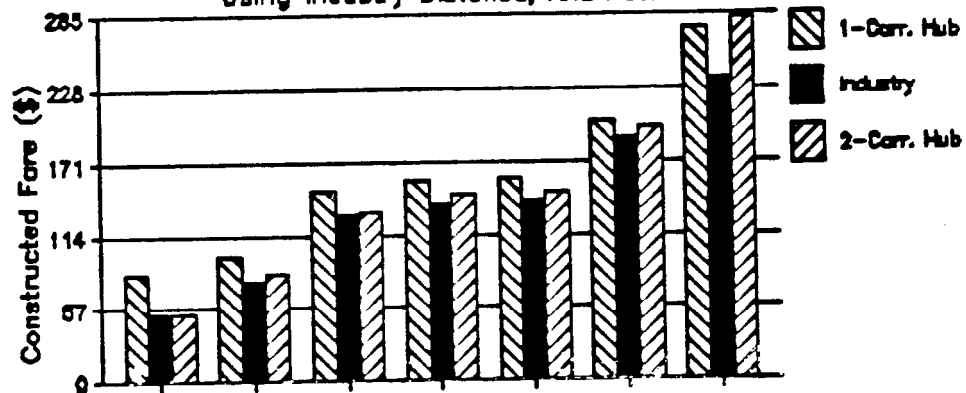
IND. AND CONSTR. FARE AT CONCEN. HUBS, 1988
Using Industry Distance, And Actual Yield

Legend:
- 1-Carr. Hub
- Industry
- 2-Carr. Hub

Distance intervals: 0-250, 251-500, 501-750, 751-1,000, 1,001-1,500, 1,501-2,000, Over 2,000
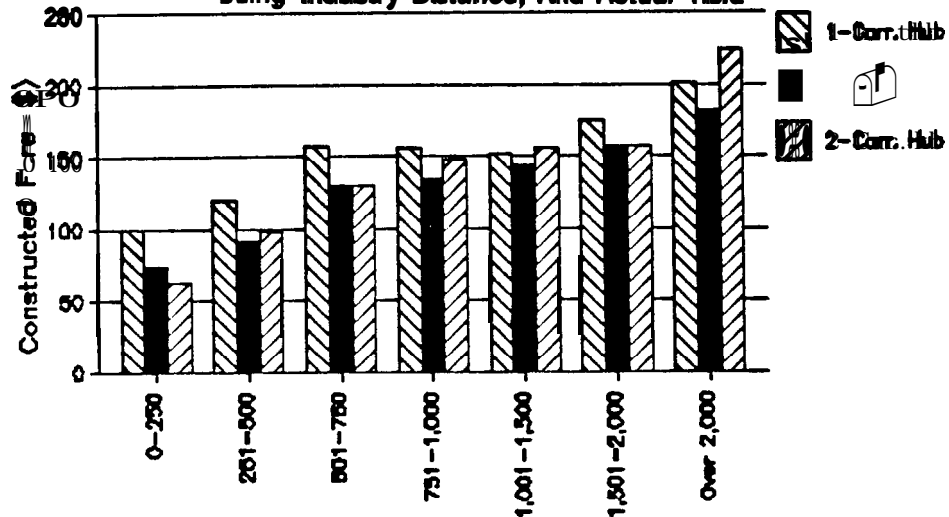
Distance Interval

In domestic markets in general, fares tend to drop as market
density increases. For example, in markets below 250 miles the
fare difference between the density intervals 201-500 passengers
per day and over 500 per day for the industry was over $25,
($89.37 less $63.60). Since the eight concentrated hubs had no
markets in this very dense, short-haul category, the effect of
market density can be seen to be critical in any analysis of fare
differences. (See Table I-9 for data.) The following section
examines yield differences by distance and density interval.

B. 3. c. <u>Yield By Distance and Density Interval and
Hub Concentration</u>

The graph below and those on the following pages show differences
between monopoly, 2, 3, and 4 carrier markets, and the industry
results compared to monopoly, and one or two-carrier concentrated
hubs for 1988. Data are separated by density and mileage
intervals and are taken from Table I-9.

Data for the thinnest markets, those under fifty passengers per
day, are shown directly below. The upper graph shows practically
no differentiation by degree of competitiveness, indicating that
the fares are probably priced at cost. Very slight
differentiation is shown in our monopoly and concentrated hub
groupings. We conclude that pricing in the thinnest markets
reflects cost of service more than the exercise of any market
power.

1988 YIELD PER MILE BY DENSITY INTERVAL

Density 0-50 Passengers per Day

Distance Interval (MILES)
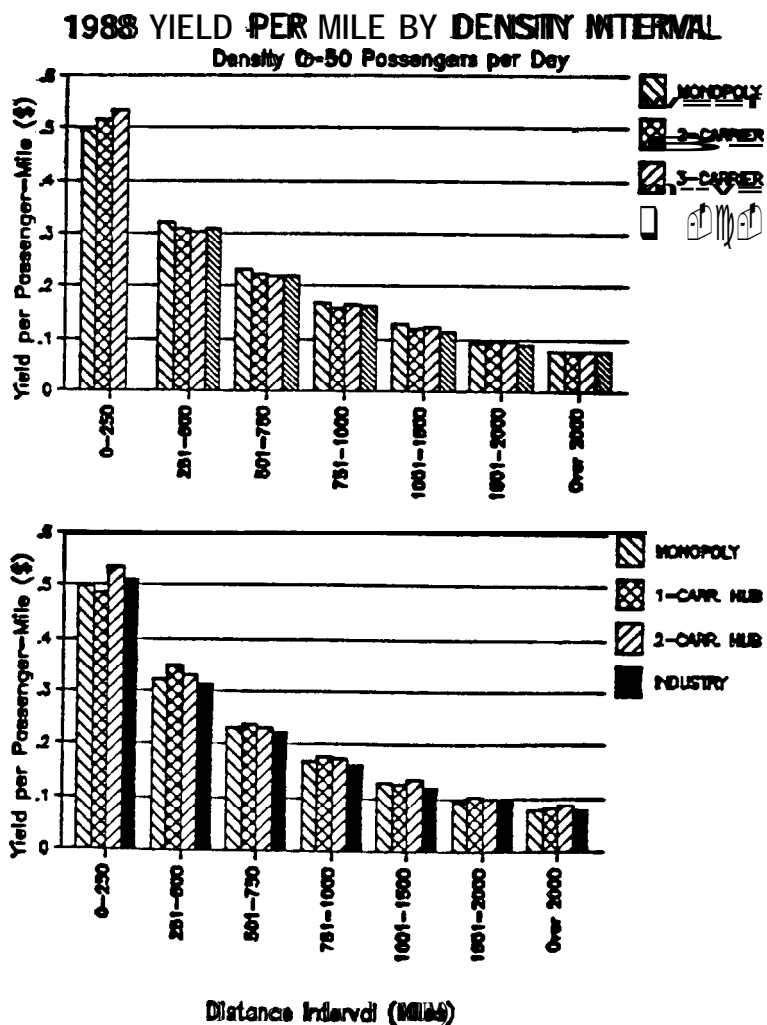
The next two pages show graphically the medium and high density market yield differences by distance interval and competitive or hub status. In the upper graphs it is quite clear that the introduction of competitors causes declines in yield, across all distance intervals except the very short-haul, 0-250 miles. In some cases, however, the monopoly and two carrier markets are significantly higher than more competitive market groupings. Compare the 251-500 and 501-750 mileage intervals in the 101-200 passengers per day interval and the 501-750 mileage interval in the over 500 per day density class.

Yield premiums in the 1-carrier concentrated hubs (lower graphs) are quite high and particularly evident in the 251-750 mileage intervals, becoming more pronounced as density increases. Two-carrier concentrated hubs show a pronounced premium in only the 501-750 mileage interval at 101-200 passengers per day. Note that average yield tends to decline only in mileage blocks under 1,000 miles, and that a significant fall in yield occurs in the over 500 passengers per day density interval.

These data suggest that significant yield (and fare) differentials tend to occur in the dense, short-haul markets, and are not related to cost or value of service differentials but to the level of competition. The failure of long-haul yields to change significantly with density, if at all, suggests that competition for the long-haul passenger is very intense at all density intervals.

1988 YIELD PER MILE BY DENSITY INTERVAL

Density 51-100 Passengers per Day

Yield per Passenger-Mile ($)

- MONOPOLY
- 2-CARRIER
- 3-CARRIER
- 4-CARRIER

.6 .5 .4 .3 .2 .1 0

0-250 251-500 501-750 751-1000 001-1500 501-2000 Over 2000

Yield per Passenger-Mile ($)

- MONOPOLY
- 1-CARR. HUB
- 2-CARR. HUB
- INDUSTRY

0-250 251-500 501-750 751-1000 1001-1500 1501-2000 Over 2000

Distance Interval (Miles)

1988 YIELD PER MILE BY DENSITY INTERVAL

Density 101-200 Passengers per Day

Yield per Passenger-Mile ($)

- MONOPOLY
- 2-CARRIER
- 3-CARRIER
- 4-CARRIER

0-250 251-500 501-750 751-1000 1001-1500 1501-2000 Over 2000

Yield per Passenger-Mile ($)

- MONOPOLY
- 1-CAR. HUB
- 2-CARR. HUB
- INDUSTRY

0-250 251-500 501-750 751-1000 001-1500 001-2000 Over 2000

Distance Interval (Miles)

1988 YIELD PER MILE BY DENSITY INTERVAL

Density 201-500 Passengers per Day

Yield per Passenger-Mile ($)

MONOPOLY
2-CARRIER
3-CARRIER
4-CARRIER

Distance Interval (Miles)

MONOPOLY
1-CARR. HUB
2-CARR. HUB
INDUSTRY
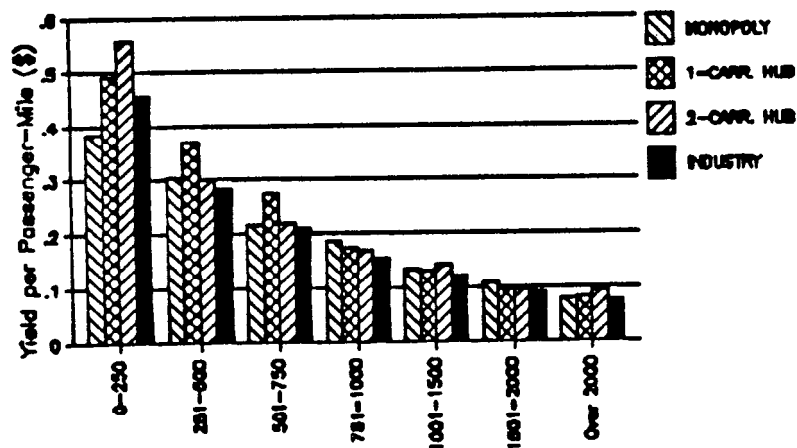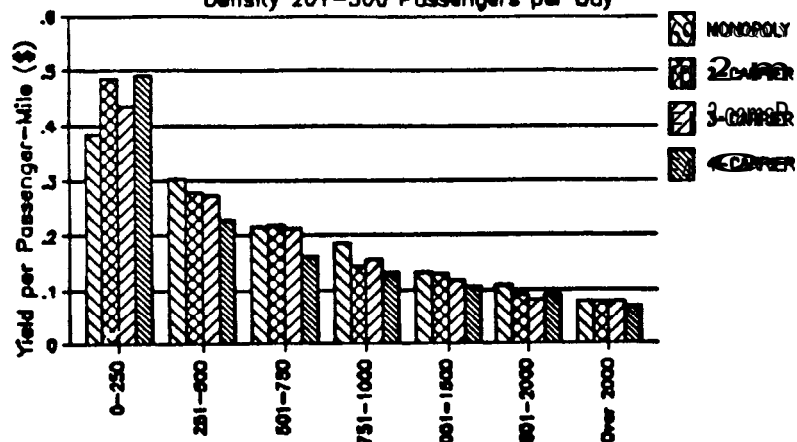
1988 YIELD PER MILE BY DENSITY INTERVAL

Density Over 500 Passengers per Day

Yield per Passenger-Mile ($)

MONOPOLY
2-CARRIER
3-CARRIER
4-CARRIER

Distance Interval (Miles)

MONOPOLY
1-CARR. HUB
2-CARR. HUB
INDUSTRY
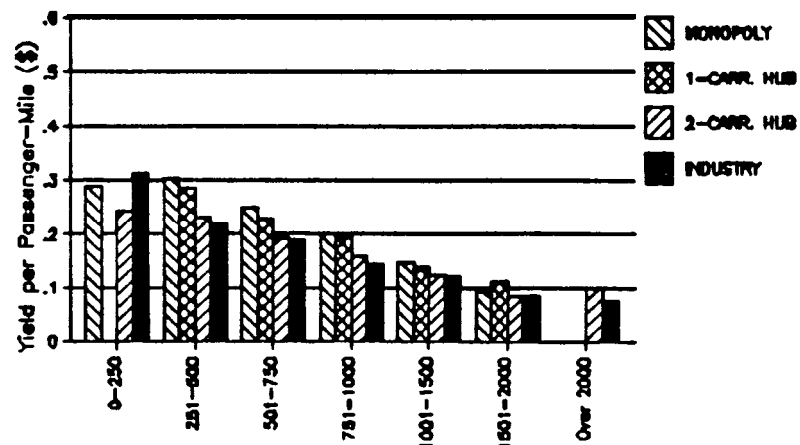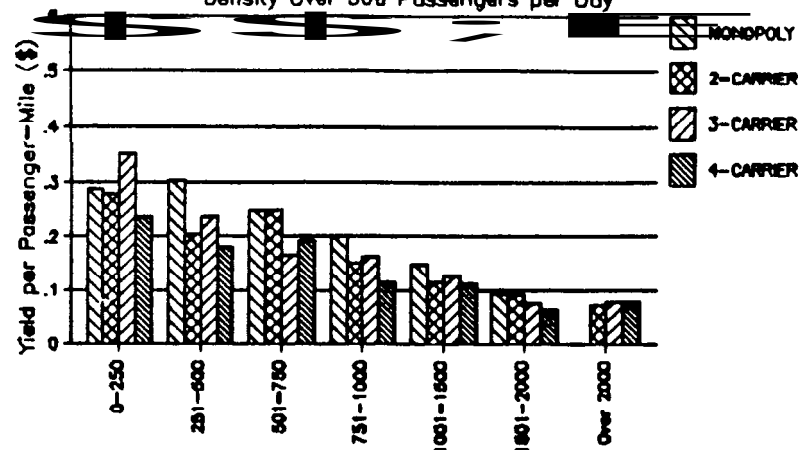
B. 4. c.   Passengers in One and Two Carrier Concentrated
Hubs and the Industry, 1979, 1984, and 1988

The number of passengers in our sample by grouping is shown
graphically on the following page. In some distance intervals the
passengers travelling in 2-carrier concentrated markets approaches
nearly half of the industry total, but, as we have shown previously,
these passengers do not necessarily pay a premium. Single-carrier
concentrated hub passengers never constitute a large percentage of
passengers in any distance interval. It should be noted that the
passenger groupings are not always mutually exclusive -- a passenger
traveling between a two-carrier concentrated hub and a single-carrier
concentrated hub will be included in both categories, as well as the
industry total (once). Data are from Tables I-6 through I-8.

The percentage of passengers each concentrated hub class as a
percentage of the industry total, by mileage block, is shown below.

Concentrated Hub Percentage of
Industry Passengers, by Distance Interval

		Distance Interval						
	0-250	251-500	501-750	751-1000	1001-1500	1501 2000	Over 2000	Total
1988								
1 Carrier Hubs	0.9	3.8	2.5	2.1	1.9	1.4	0.4	13.0
2 Carrier Hubs	3.8	7.2	7.1	5.8	5.8	3:7	0.3	33.7
1984								
1 Carrier Hubs	1.0	4.3	2.3	1.8	1.7	1.1	0.2	12.5
2 Carrier Hubs	4.7	8.6	7.3	5.6	6.0	3.2	0.2	35.5
1979						1.3		
1 Carrier Hubs	1.6	4.9	2.9	2.4	1.8	3:2	0.3	15.2
2 Carrier Hubs	3.8	8.2	7.7	5.5	5.7		0.2	34.3

INDUSTRY AND CONCENTRATED HUB PASSENGERS

By Distance Interval, C.Y. 1988
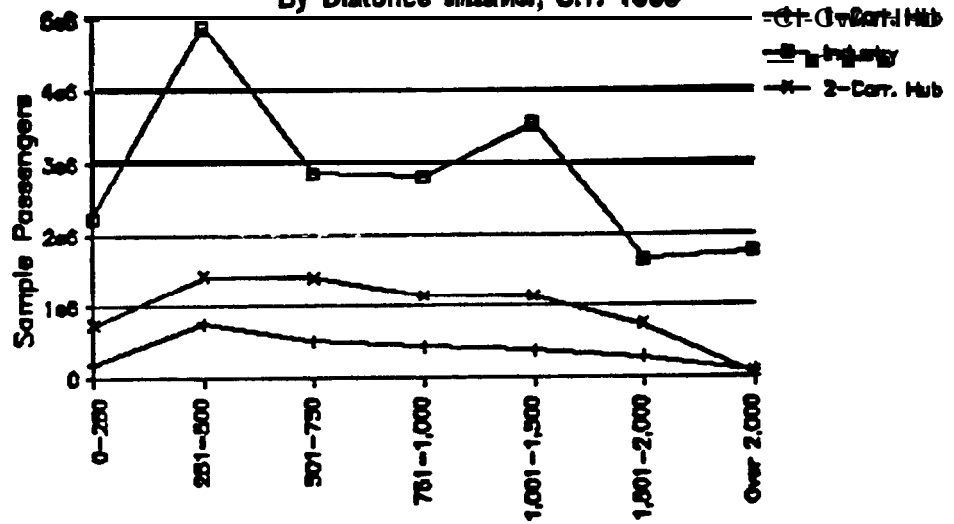
By Distance Interval, C.Y. 1984
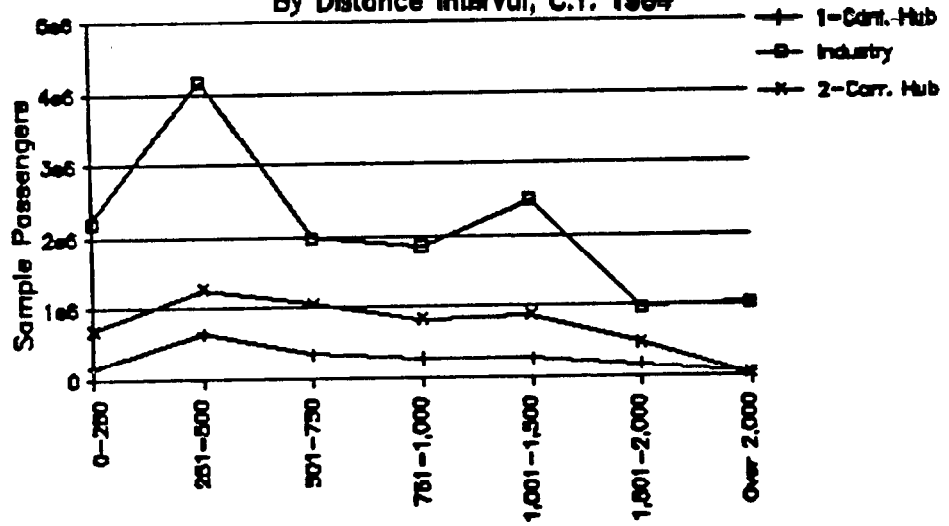
By Distance Interval, C.Y. 1979
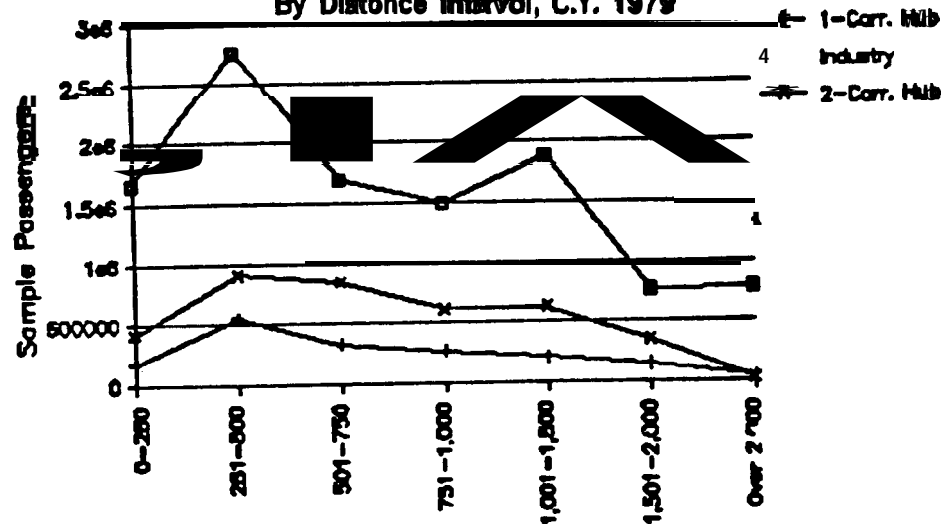
B.. 4.. d.. **Analysis of GAO's Concentrated and Unconcentrated Hub Groups Compared to the Industry Total**

In a recent study titled "Air Fares and Service at Concentrated and Airports" (GAO-RCED-89-37), the GAO compared fares from 15 concentrated airports to fares from 38 unconcentrated airports. Our data supports GAO's general contention that passengers at concentrated hubs pay a premium, but our analysis does not support GAO's 27 percent yield differential. We found GAO's concentrated markets have an average fare about 18.4 percent above the industry average when the industry data exclude the GAO concentrated hub data. Our percentage premium methodology is described in Section C, below. Data are from Table I-10, I-12, and I-13.

Differences in methodology between the GAO's study of fare premium in concentrated airports and the Department's study of concentrated hubs are shown in Table I-11.

Yield differentials by mileage block are graphically presented below.

1988 HUB DATA USING GAO HUB CLASSES
Compared to Industry Data

Legend:
- Concentrated
- Unconcentrated
- Industry
- Uncon. – Resort

Y-axis: Yield per Passenger—Mile

X-axis (Distance Interval): 0–250, 251–500, 501–750, 751–1,000, 1,001–1,500, 1,501–2,000, OVER 2,000
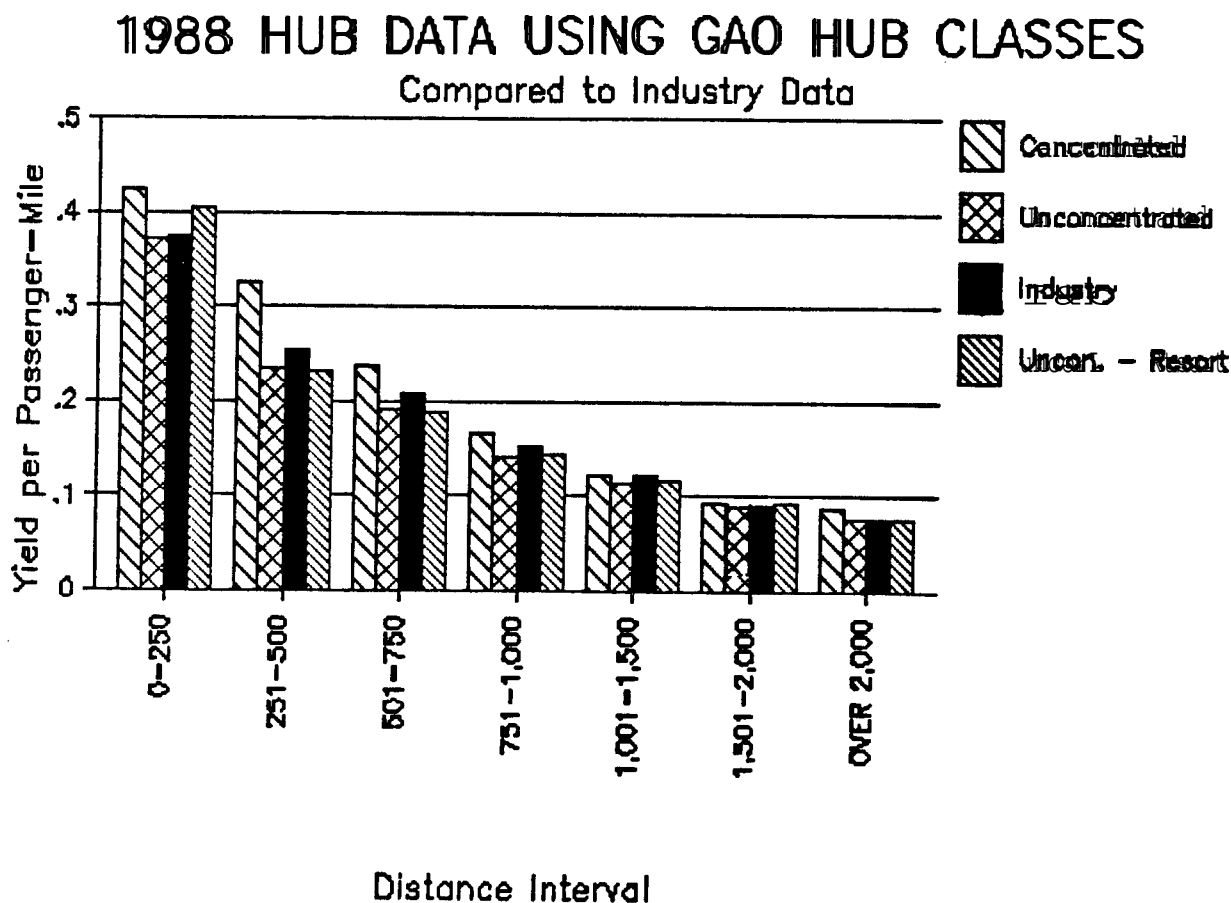
C. The Fare Premium Paid in Monopoly Markets and at Concentrated Hubs

C. 1. Monopoly Markets Combined and Concentrated Hubs

As shown in the preceding section, when segmented by distance and density, there are clear differences between fare levels at monopoly markets and less concentrated markets, and between markets at concentrated hubs, compared with other markets in general. To determine what these average differentials (premiums) were overall, each category was compared to the industry average fare (excluding the markets in the category under study) in that distance and density interval. The fare premium was then weighted by the number of passengers in the subject categories' distance and density interval. The total differential, or premium, is thus the weighted sum premium of each distance and density interval.

The methodology is shown algebraically below and further explained in Table I-14.

Premium Construction (By Distance and Density Interval) 5/

Base Data   Constructed Data

Industry Avg. Distance (A)   Category Fare, A x C
Industry Avg. Fare (B)   Fare Premium, (A x C) - B
Category Yield (C)   Wtd. Fare Sum ((A x C) - B) x D
Category Passengers (D)   Wtd. Percent =
                                   Sum Wtd. Fare Premium
                                   Average Category Fare, less
                                       Wtd. Fare Premium

The calculated average fare premiums, by category, are as follows:

	Dollars	Percent
Monopoly Markets	$16.59	14.0%
Concentrated Hub (single-carrier)	$22.30	18.7%
Concentrated Hub (two-carrier)	$10.42	8.9%
GAO Concentrated	$21.44	18.4%

SOURCE: Tables I-16, I-14.1, I-15.1, I-19.

5/ In each case below the subgroup data is first subtracted from the industry data to give an "industry" figure excluding the comparative subgroup data.

As can be seen from the above, single-carrier concentrated hubs show
the largest fare premiums, very close to the GAO concentrated market
premiums and somewhat higher than the monopoly market fare premiums.
Multi-carrier concentrated hubs show premiums of about one half the
single-carrier hub premiums.

C. 2. Individual Concentrated Hub Premiums

Fare premiums were also calculated for individual hubs in 1988 and
1984 as shown on the following page. Looking first at 1988 premiums,
each single-carrier concentrated hub shows a fare premium -- ranging
from 10.4 percent at Pittsburgh to 34.1 percent at Cincinnati.
Average fares for markets involving these hubs were greater than
comparison markets in most distance and density categories, but the
most significant premiums were in markets of more than 100 passengers
per day and distances ranging from 250-1,000 miles. Passengers
traveling in these distance and density categories accounted for 71
percent of the 1988 premiums at single-carrier concentrated hubs.
Fares in these dense markets are frequently higher than fares in less
dense markets of the same distance at the same hub. This is the
reverse of what is normally observed in the airline industry. In
other words, where scale efficiencies and competition would be
expected to provide lower fares (i.e., in dense markets) the highest
fares are being charged. These distance and density categories at
single-carrier concentrated hubs accounted for only 4.1 percent of
total industry revenue passenger-miles, however. In 1984, prior to
the industry consolidation, the local fare premiums were also
generally high at these eight hubs.

The multi-carrier concentrated hubs do not show a consistent pattern
of fare premiums as do the single-carrier hubs. Five of the eight
hubs show fare premiums ranging from 6.7 to 40.2 percent, but three of
the eight hubs show below average fares of 1.2 to 10.8 percent. Also,
premiums at the multi-carrier hubs show no strong tendency to be
clustered at particular distance and density categories. One
important observation about the multi-carrier concentrated hubs is
that the existence of a second hubbing carrier does not necessarily
result in lower local fares. The highest average premium was found at
Atlanta, a single airport city, even though there were two major
hubbing carriers at Atlanta in 1988. Premiums were high at most
distance and density intervals, but the bulk of the premium at Atlanta
was accounted for by only a few markets. This suggests that a second
major hubbing carrier at a city does not necessarily result in lower
local fares. On the other hand, a dramatic drop in the premium at
Chicago was recorded between 1984 and 1988. Most of the drop was
accounted for in high density markets, apparently the result of
increased competition for local traffic by Southwest and Midway
Airlines at the city's other major airport -- Midway.

Fare Premiums at Individual Concentrated Hubs
For Calendar Years 1988 and 1984

	1988			1984		
	Fare Premium		Dom. Carr. Enplanement	Fare Premium		Dom. Carr. Enplanement
Hub	Amount	Percent	Share %	Amount	Percent	Share %
Single-Carrier:						
Charlotte	$30.80	27.1%	90%	$25.26	22.7%	75%
Cincinnati	$40.06	34.1%	78%	$33.83	29.5%	56%
Dayton	$22.23	17.3%	75%	$13.61	10.2%	63%
Memphis	$35.85	28.8%	86%	$33.71	28.1%	47%
Minneapolis/ St. Paul	$24.44	19.7%	78%	$14.23	12.0%	48%
Pittsburgh	$11.36	10.4%	86%	$15.86	16.3%	77%
St. Louis	$20.47	17.8%	82%	$18.91	16.4%	58%
Salt Lake City	$22.13	16.7%	80%	$13.24	9.9%	71%
Average*	$22.30	18.7%	83%	$17.06	23.4%	62%

Fare Premiums at Individual Concentrated Hubs
For Calendar Years 1988 and 1984

	1988			1984		
	Fare Premium		Dom. Carr. Enplanement	Fare Premium		Dom. Carr. Enplanement
Hub	Amount	Percent	Share %	Amount	Percent	Share %
Multi-Carrier:						
Atlanta	$ 45.70	40.2%	93%	$ 45.02	38.8%	93%
Chicago	$ -1.41	-1.2%	72%	$ 30.99	27.5%	68%
Dallas	$ 20.10	18.5%	79%	$ 9.14	9.8%	68%
Denver	$ -6.87	-5.4%	85%	$ -7.37	-6.0%	65%
El Paso	$-21.77	-18.0%	73%	$-35.65	-30.5%	82%
Houston	$ 7.45	6.7%	76%	$ -8.82	-9.0%	51%
Nashville	$ 12.60	10.3%	71%	$ 21.53	17.4%	38%
Raleigh/ Durham	$ 12.25	9.6%	80%	$ 12.13	11.9%	52%
Average*	$ 10.42	8.9%	83%	$ 13.58	12.5%	62%

* The weighted average fare premium for either the combined single-carrier hubs or combined multi-carrier hubs counts markets involving two of the concentrated hubs only once. Also, because the distributions of traffic and fares differ among individual hubs, the combined data for all eight single-carrier hubs or multi-carrier hubs reflect the net effect of high and low premiums in individual distance and density categories.

Yield differentials for 1988 by distance interval for the individual concentrated hubs are shown on the following page.

Looking at the single-carrier concentrated hubs (Charts, P. 26), with the exception of the yield at Pittsburgh in the 751-1,000 and 1,501-2,000 mile distance intervals, all of the average yields are above the industry average, some significantly higher. The multi-carrier concentrated hubs show yield averages above and below the industry average at all distance intervals. Raleigh/Durham, Atlanta, and Nashville are consistently over the industry average.

YIELD AT SINGLE-CARRIER CONCENTRATED HUBS
By Nonstop Distance Interval, C.Y. 1988

Legend:
- Minneapolis
- Cincinnati
- Dayton
- St. Louis
- Pittsburgh
- Memphis
- Salt Lake City
- Charlotte
- Industry

Distance Interval

YIELD AT MULTI-CARRIER CONCENTRATED HUBS
By Nonstop Distance Interval, C.Y. 1988

Legend:
- Dallas/Ft. Worth
- Denver
- Atlanta
- Chicago
- Houston
- Nashville
- El Paso
- Raleigh/Durham
- Industry

Distance Interval

The charts on the following two pages show the yield, by distance interval, for the hubs which were concentrated in 1988 for 1984 and 1979. In 1984 the single-carrier concentrated hubs show nearly all of the mileage interval yields above the industry average, the exception being Salt Lake City in the 251-500 and 751-1,000 distance intervals. The multi-carrier hubs in 1984 show yield above and below the industry average, with, however, Atlanta, Chicago, and Nashville markedly above the average for markets below 500 miles. The single-carrier hubs have yields clearly above the multi-carrier hubs through 1,000 miles.

In 1979 the effect of rate regulation is evident. There is no consistent differentiation by hub by mileage interval, whether one-or two-carrier concentrated, nor is there any difference between the hub classes -- one-carrier hubs have the same general fare level as two-carrier hubs. Almost all 1979 hub yields are very close to the industry average.

YIELD AT SINGLE-CARRIER CONCENTRATED HUBS
By Nonstop Distance Interval, C.Y. 1984

Charlotte
Salt Lake City
Memphis
Pittsburgh
St. Louis
Dayton
Cincinnati
Minneapolis
Industry

Distance interval

YIELD AT MULTI-CARRIER CONCENTRATED HUBS
By Nonstop Distance Interval, C.Y. 1984

Dallas/Ft. Worth
Denver
Atlanta
Chicago
Houston
Nashville
El Paso
Raleigh/Durham
Industry

Distance Interval

YIELD AT SINGLE-CARRIER CONCENTRATED HUBS
By Nonstop Distance Interval, for 1979

Yield per Passenger—Mile

Distance interval

Legend:
- Charlotte
- Salt Lake City
- Memphis
- Pittsburgh
- St. Louis
- Dayton
- Cincinnati
- Minneapolis
- Industry

YIELD AT MULTI-CARRIER CONCENTRATED HUBS
By Nonstop Distance Interval, for 1979

Yield per Passenger—Mile

Distance Interval

Legend:
- Dallas/Ft. Worth
- Denver
- Atlanta
- Chicago
- Houston
- Nashville
- Raleigh/Durham
- Industry
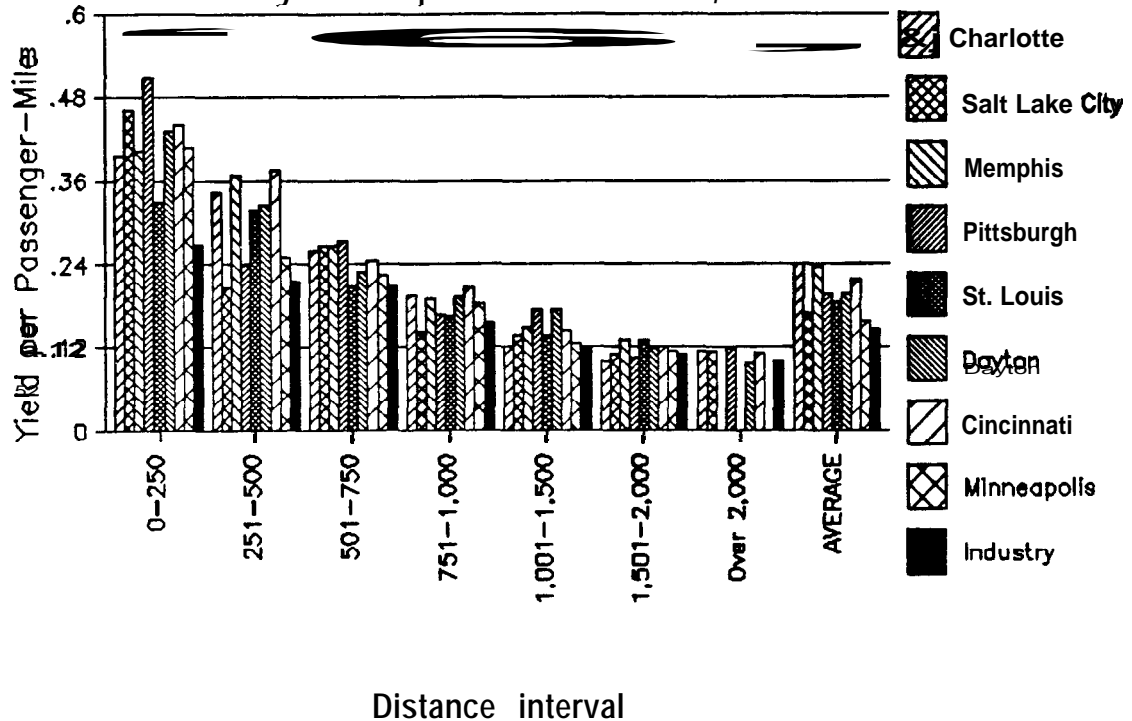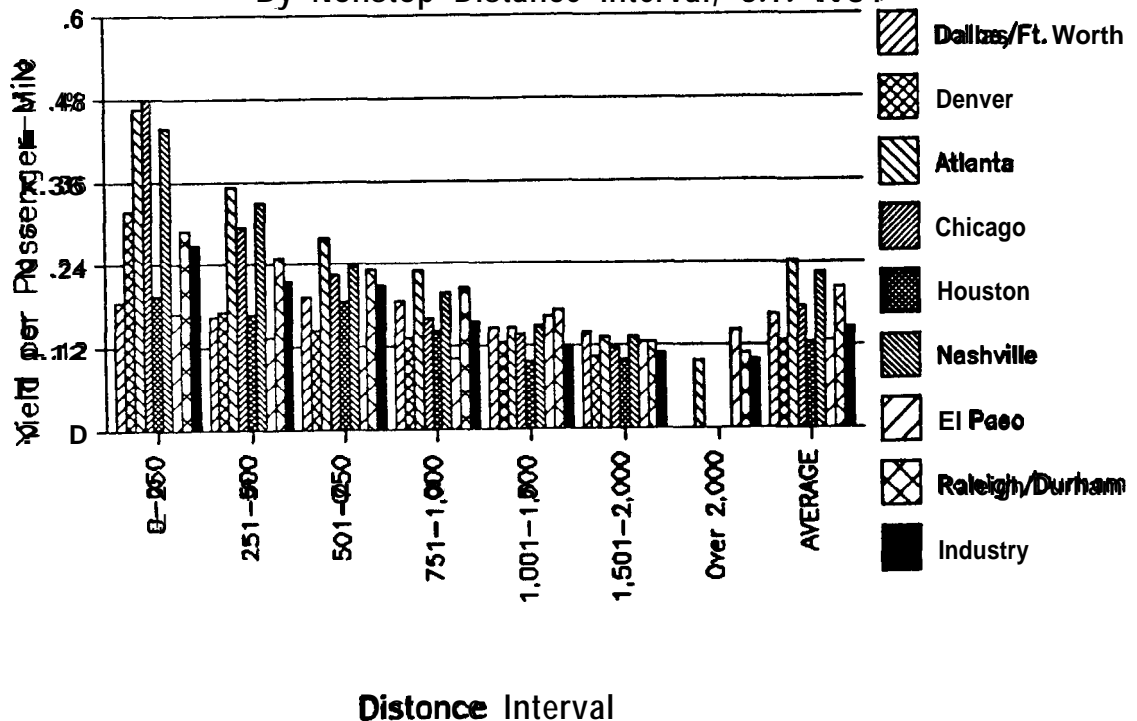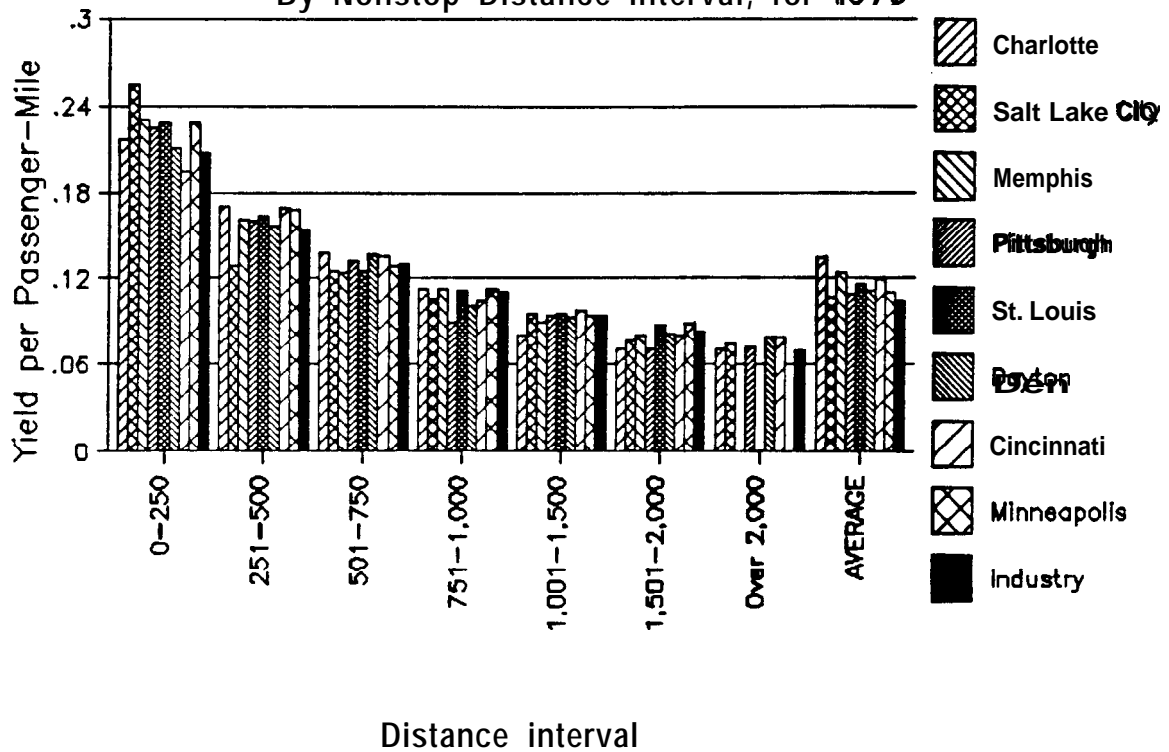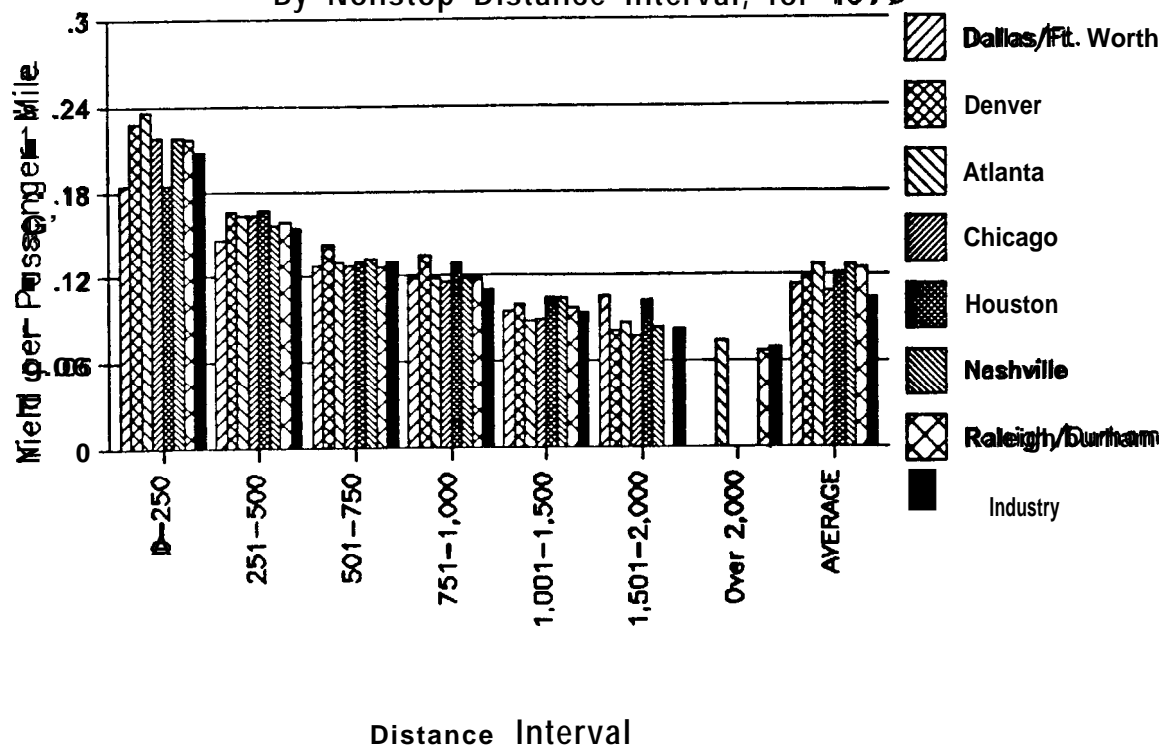
D. Local and Connecting Fares and Revenues at Concentrated Hubs

D. 1. Local and Connecting Fares at Concentrated Hubs.

There has been some question whether the local market fares from a concentrated hub are higher or lower than fares available for markets involving on-line connections over that hub. Because of the computer time and expense necessary to search the origin-destination survey records for connecting market data, we limited our analysis of this question to four concentrated hubs -- Minneapolis/St. Paul (Northwest), St. Louis (Trans World), Charlotte (Piedmont), and Salt Lake City (Delta), and further limited our analysis to the major carrier at those concentrated hubs. Local market yields were developed from all local markets with at least 100 sample tickets and no change of aircraft (single-coupon tickets). Connecting market yields were developed from all connecting markets with at least 100 sample tickets, with no more than two coupons, and which showed the connecting point to be the concentrated hub at issue. All yields were developed using nonstop mileage for each market-pair.

The average local and connecting nonstop distance, fare, and yield for the four concentrated hubs are shown below:

| | Concentrated Hub | | | |
	St. Louis	Charlotte	Salt Lake City	Minneapolis/ St. Paul
Fare - Local	$165.76	$149.48	$172.22	$157.56
Connecting	$182.05	$140.52	$173.73	$162.86
Distance - Local	832	546	810	864
Connecting	1,700	825	1,461	1,559
Yield - Local	$.1993	$.2738	$.2125	$.1824
Connecting	$.1071	$.1703	$.1189	$.1044

Source: Table 1-18.

As shown above, there is a significant difference between the yield for local and connecting passengers, unadjusted for differences in market distance. Without such adjustment, however, any comparison of yield is invalid. Rather than adjust the data to reflect comparable market distance, the local yield for each market-pair and an equivalent number of sample connecting markets were grouped by nonstop market distance. The charts on the following four pages show the local and connecting yield graphs separately, then a combined local and connecting yield graph. (Data from Table I-17.)

PIEDMONT'S **1988** LOCAL YIELD AT CHARLOTTE
Based on Nonstop Mileage
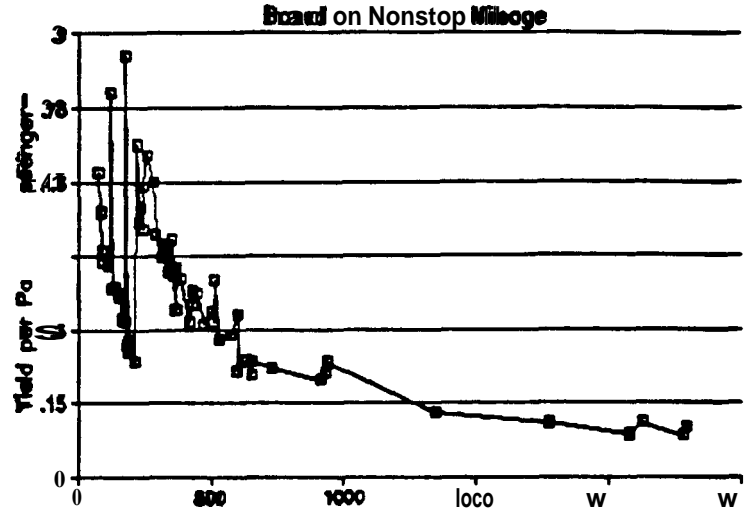
PIEDMONT'S **1988 CONN.** YIELD AT **CHARLOTTE**
Based on Nonstop Mileage
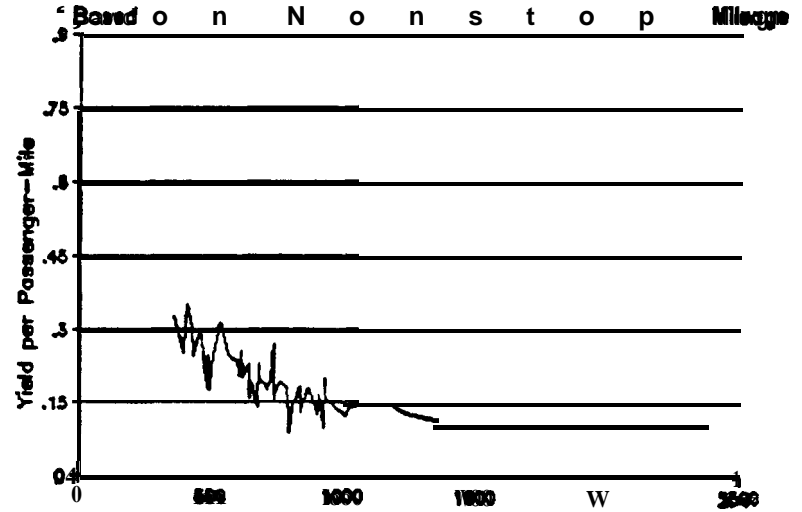
COMBINED **YIELD** AT **CHARLOTTE**
Based on Nonstop Mileage
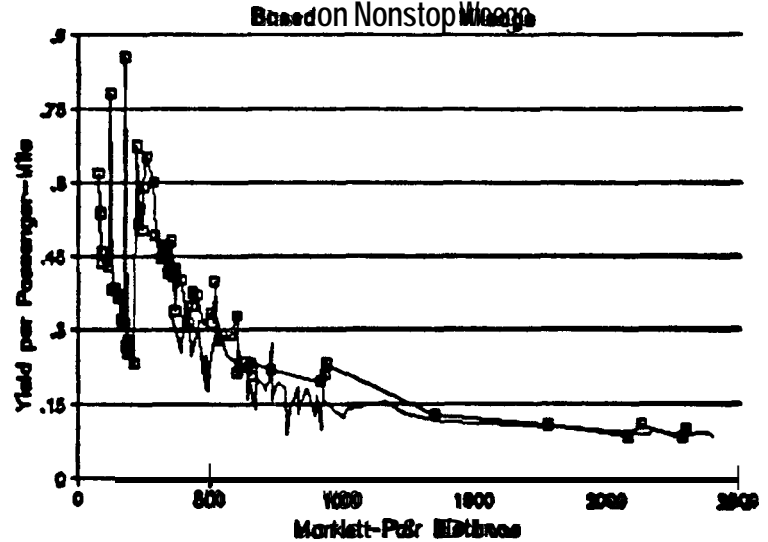
DELTA'S 1988 LOCAL YIELD AT SALT LAKE CITY

Based on Nonstop Distance
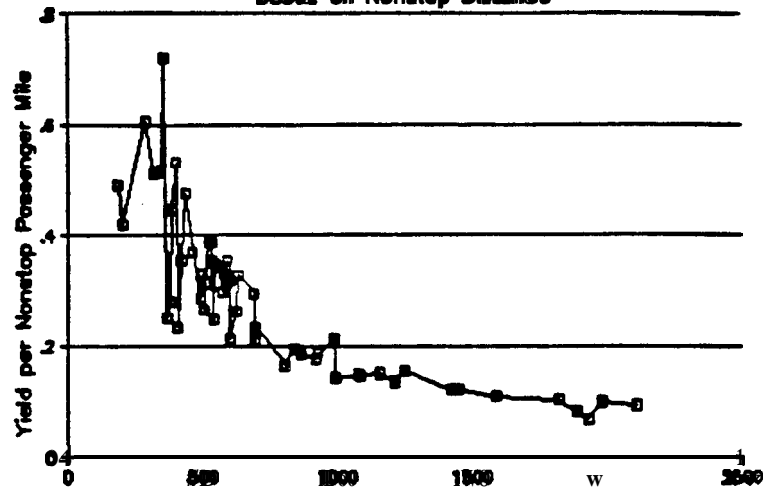
DELTA'S 1988 CONN. YIELD AT SALT LAKE CITY

Based on Nonstop Distance
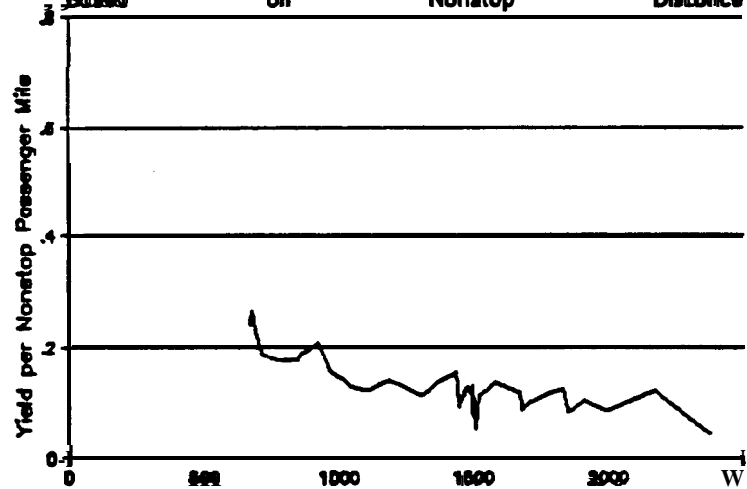
COMBINED YIELD AT SALT LAKE CITY

Based on Nonstop Distance

Market-Pair Distance
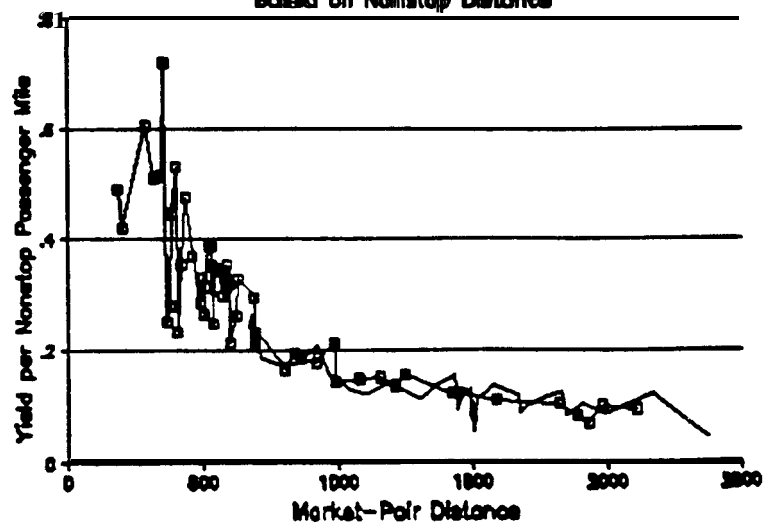
TRANSWORLD'S 1988 LOCAL YIELD AT ST. LOUIS
Based on Nonstop Distance
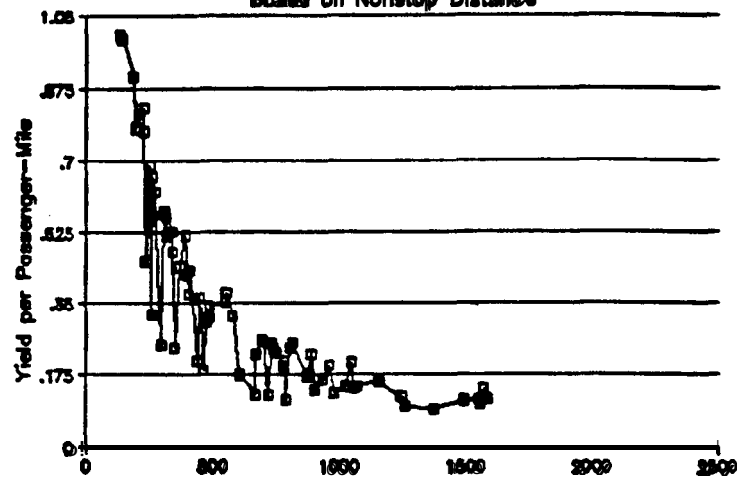
TRANSWORLD'S CONN. YIELD AT ST. LOUIS
Based on Nonstop Distance
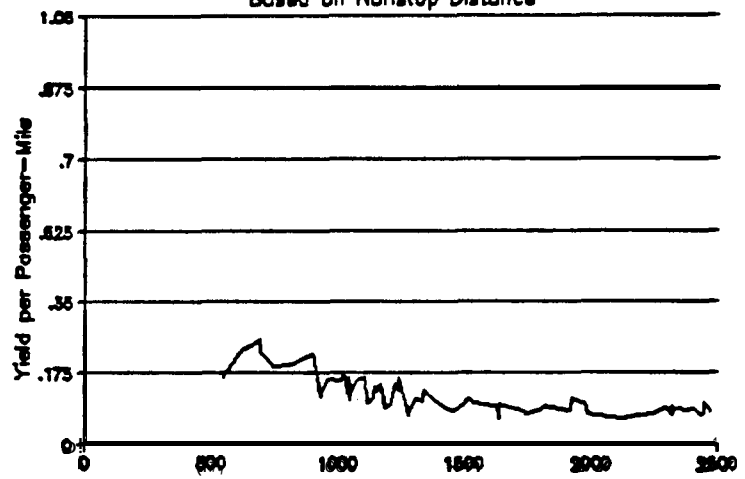
COMBINED YIELD AT ST. LOUIS
Based on Nonstop Distance
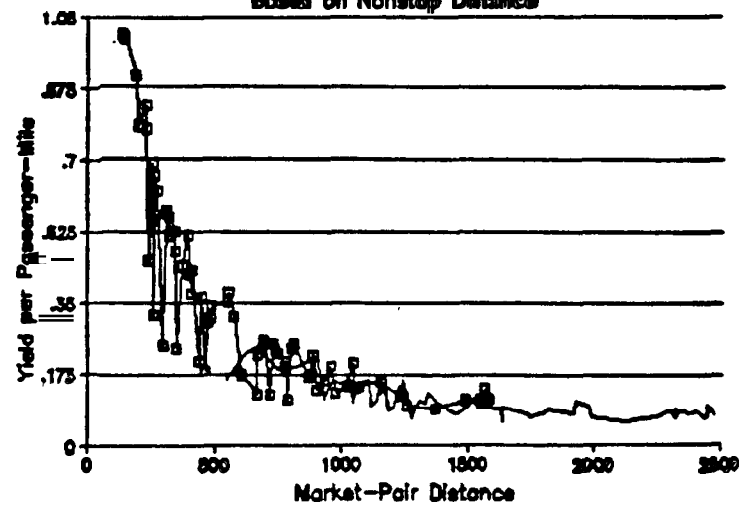
NORTHWEST'S LOCAL YIELD AT MINNEAPOLIS
Based On Nonstop Mileage
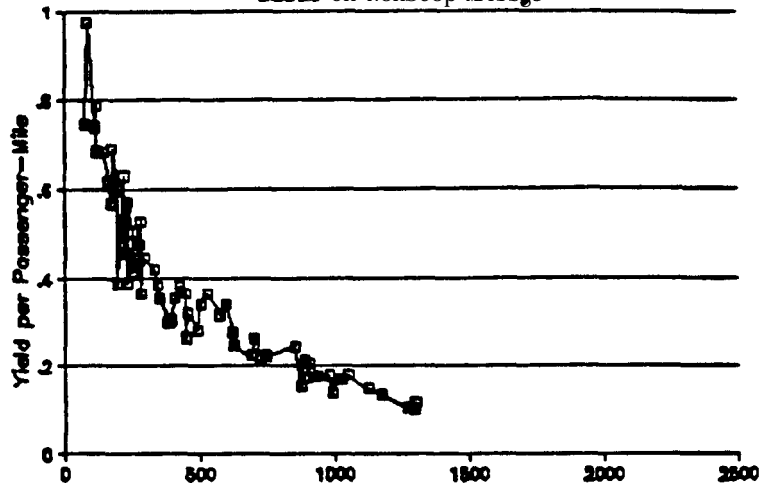
NORTHWEST'S CONN. YIELD AT MINNEAPOLIS
Based On Nonstop Mileage
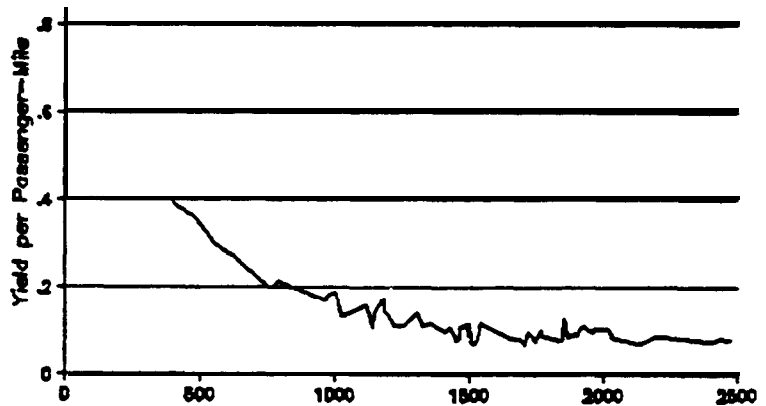
COMBINED YIELD AT MINNEAPOLIS
Based On Nonstop Mileage

Market-Pair Distance
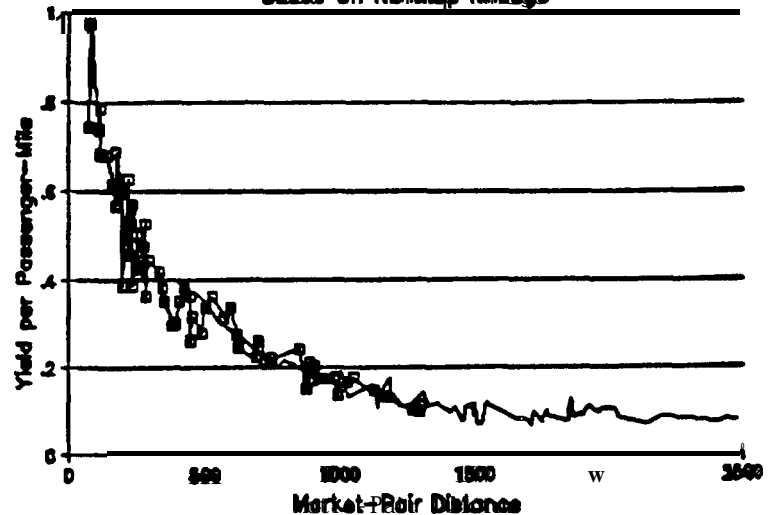
Except at Charlotte, there is no discernible difference between local
and connecting yield where the local and connecting mileages overlap.
Connecting passengers are few for distances below 500 miles, and hence
do not make our minimum passenger screen. At Charlotte it appears
that the local yields charged by Piedmont in 1988 were consistently
higher than the connecting yields charged by the carrier for markets
in the 400-1,000 mile range.

While the Charlotte example supports the contention that local
passengers may be charged higher fares at concentrated hubs then
through passengers for distances below 1,000 miles, Salt Lake City,
St. Louis, and Minneapolis/St. Paul show little differentiation
between local and connecting yield. However, the average local and
connecting passenger distances for Charlotte are much less than the
other concentrated hubs, such that Charlotte may be an exception to
concentrated hubs in general (Section D.2, below, also indicates that
Charlotte has a markedly lower rate of local to total passengers and
revenue.)

Our analysis is thus not conclusive, though in general it appears to
show that there is no significant difference between fares charged
local passengers and those charged through passengers at concentrated
hubs for markets of less than 1,000 miles distance. This result is
not in conflict with our earlier finding that local passengers at
concentrated hubs are charged a premium. The connecting markets in
this analysis are primarily thin markets of the type which do not show
a premium when compared to other markets of similar distance and
density.

D. 2. Local and Connecting Revenues at Selected Concentrated Hubs

Our analysis of local and connecting fares, above, provided a
data base sufficient to estimate whether the bulk of a carriers'
revenue at those selected concentrated hubs would be generated from
local or flow (connecting) passengers. We found that the local to
total revenue ratios are about 10 percentage points higher than the
local (true origin-destination) passengers are in proportion to total
enplaned passengers.

**Ratio of Local to Total Enplaned Passengers and
Local to Total Revenues at Selected Hubs**

Ratio	Charlotte (Piedmont)	St. Louis (Trans World)	Salt Lake City (Delta	Minneapolis/ St. Paul (Northwest)
Local/Total Psgr.	.244	.394	.419	.523
Local/Total Rev.	.329	.517	.537	.693

Source: Table I-18.

The percentages indicate that the level of service in concentrated
hubs with a small local market, absent locational advantages, is
highly dependent upon that connecting traffic.

E.   The Distribution of Passenger Fares by Market Structure

To examine whether the availability of discount fares differs,
depending on the competitiveness of the market, we constructed the
distribution of fares paid in a market as a percentage of the average
(mean) fare, by competitive category. (Competitive categories were
determined by the count of carriers with at least a 10 percent market
share.)

The charts on the following page show both the absolute number of
passengers by percent of the mean fare by competitive category, and
also the percent of total passengers by percent of the mean fare.

As indicated in the upper and lower graph, the distribution of
passengers about the mean fare does not differ materially from one
competitive category to another, with the exception of monopoly
markets. The monopoly market fare distribution shows little evidence
of peaking, being relatively flat from about 60 percent of the average
fare through 120 percent of the average fare. This suggests that the
availability of discount fares has been lessened, and that fewer
passengers receive those discounts. (The jumps in passengers and
share in the "Greater Than 200%" and "Less Than 30%" intervals are due
to first class and frequent flyer passengers, respectively.)
Regardless of the number of competitors in a market the same general
range of fares are offered. As we have shown previously, however, the
level of fares tends to be higher as the number of competitors is
reduced. Note also that the great majority of passengers are carried
in 2 and 3 carrier markets (34.6 and 32.1 percent, respectively), with
significantly fewer passengers carried in monopoly markets or markets
with 4 or more carriers (13.0 and 20.2 percent, respectively). See
also Table I-27.

FARE DISTRIBUTION ABOUT THE MEAN FARE
By Market Category, C.Y. 1988

Percent of Mean Fare
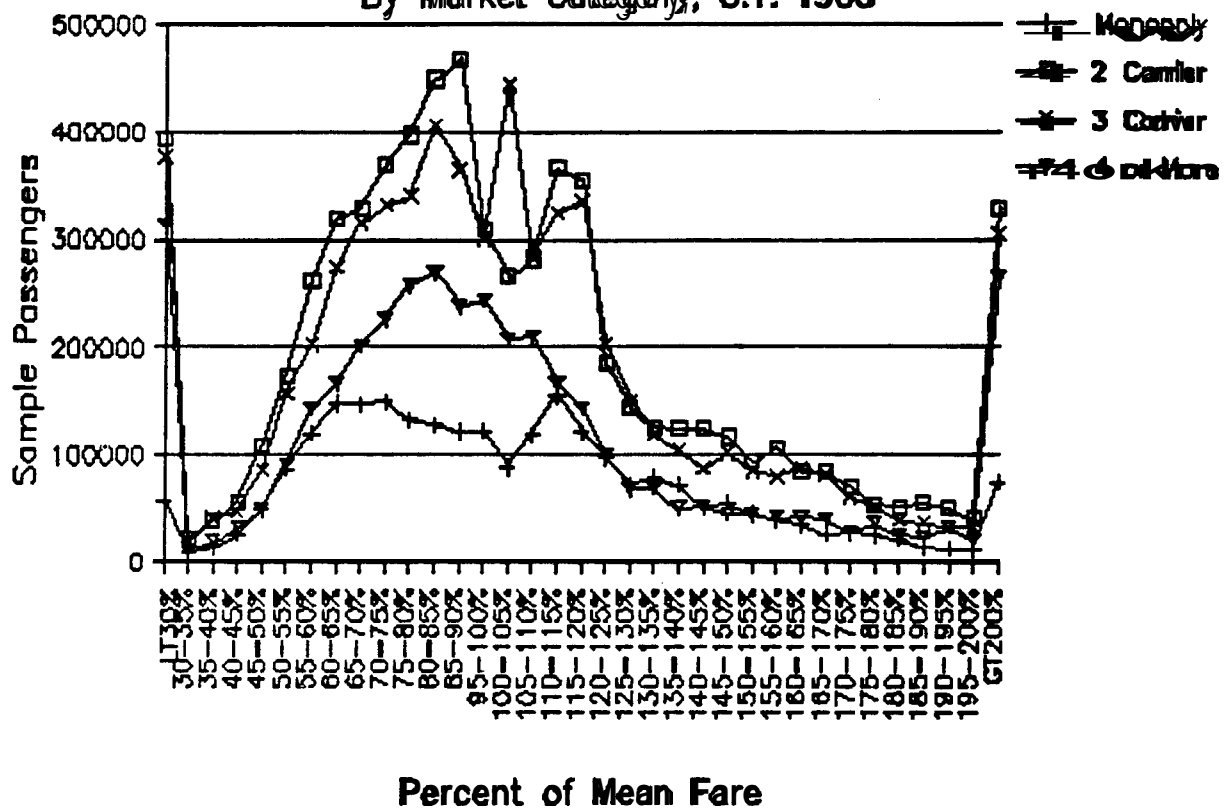
PERCENT OF PASS. ABOUT THE MEAN FARE
By Market Category, C.Y. 1988

Percent of Mean Fare

The relative passengers carried by competitive category change markedly when single-carrier concentrated hubs are examined (Chart, Page 39). In single-carrier concentrated hub markets (the eight hubs where one carrier enplaned at least 75% of the passengers in 1988), the bulk of the passengers are carried in monopoly markets, with fewer passengers carried as the markets become more competitive (monopoly, 42.2 percent, 2-carrier, 32.8 percent, 3-carrier, 20.0 percent, and 4 or more carrier, 5.0 percent). The distribution of passengers about the average fare also differs compared to all markets. This is particularly true for passengers in monopoly markets. Surprisingly, there appears to be more discounting in monopoly markets at concentrated hubs than in monopoly markets in general. A possible explanation for this may be as follows: concentrated hubs are made up of many short-haul monopoly spokes as well as some longer-haul markets. The local traffic in short-haul markets compete with the automobile and are therefore priced to "fill-up" the aircraft. In many cases thin, short-haul spoke services are operated for flow traffic to and from markets connected via the hub. Therefore, price must be set to compete with the automobile, and attempt to generate demand in thin markets sufficient to "fill up" the aircraft.

As the number of passengers in the local market increases, however, average fares in short-haul concentrated hub markets do not tend to centralize about a lower average fare as they do in more competitive markets, but continue to exhibit a wider range of fares. This explanation is consistent with our finding that thin markets to concentrated hubs are not on average paying a premium. Data for the series of graphs are presented in Tables I-23 and I-24.

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F. The Effect of Market Share on Yield and Fare

As we have indicated, our general analysis assumes that if a carrier holds a ten-percent market share, that carrier is a competitor in that market. The markets were then classified by the number of competitors. As the test of this hypothesis, we examined carrier data, as opposed to competitive market categories, and examined fare levels based on a carrier's market share. The graph below indicates that as a carrier's market share increases, it is able to charge more than a carrier with a lesser market share.

This is consistent with the "S" curve effect of service and market share, where increases or declines in service share are disproportionately reflected in market share. The higher fare level could be considered as part of a perceived service premium passengers are willing to pay for the presumed better service of the carrier with the higher market share, or alternatively, it could simply be the ability of a carrier with a higher market share to extract a market rent.

The graph, showing 20 percent market share increments, indicates that yield increases as market share increases, and that particularly in shorter-haul markets, once a carrier attains a 60 percent market share, it can command a significant yield premium.

AVERAGE YIELD BY MARKET SHARE
And Distance Interval, C.Y. 1988
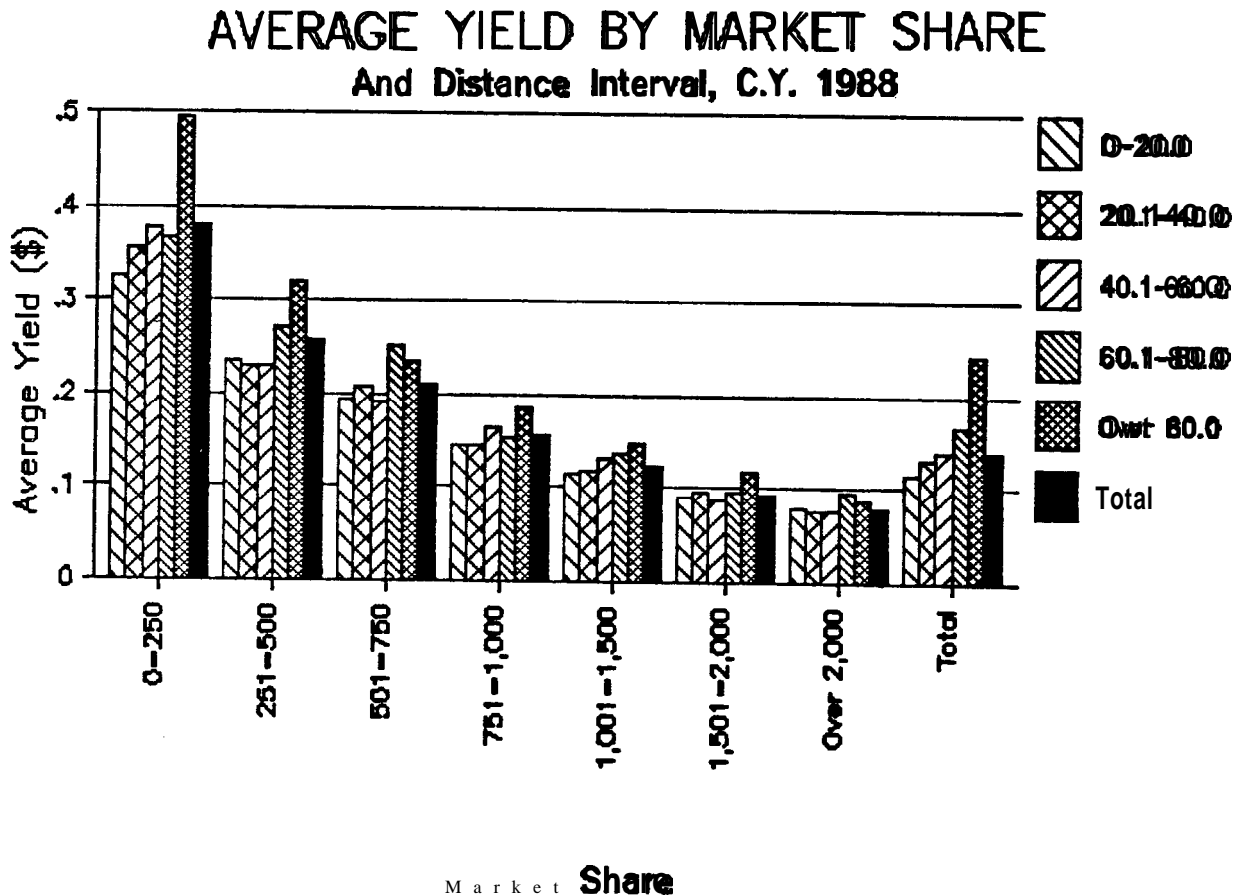
Market **Share**

The graphs on the following page shows ten percent market-share increments and the average yield by distance interval, as well as the passengers in each market-share and distance interval. Again the significance of the 60 percent market-yield differential is evident. The larger number of monopoly market passengers ("GT 90" percent share) in the 251-500 mile distance interval (as well as relatively high numbers of above 60 percent market share passengers in the 251-1,000 distance intervals) supports our previous finding that shorter-haul dense markets with limited competition may be paying disportionately high prices. Shown below is a comparison of fares for selected market share intervals, by distance interval.

Average Fare by Distance Interval and Market Share

Distance Interval			Market Share		
			20-30	50-60	80-90
251-	Avg.	Distance	362	337	359
500-	Avg.	Fare	$81.44	$76.10	$107.32
501-	Avg.	Distance	638	626	633
750	Avg.	Fare	$135.41	$128.30	$145.06
751-	Avg.	Distance	898	848	882
1,000	Avg.	Fare	$126.06	$147.57	$158.77
1,001-	Avg.	Distance	1,186	1,206	1,158
1,500	Avg.	Fare	$139.40	$156.99	$175.37
1,501-	Avg.	Distance	1,699	1,721	1,609
2,000	Avg.	Fare	$158.31	$132.00	$187.62
Over	Avg.	Distance	2,351	2,340	2,273
2,000	Avg.	Fare	$185.13	$173.40	$205.20

Source: Table I-22.

While not shown, since our comparisons are based on nonstop distance, the lower the carrier market share, the more likely circuitous routings and flight charges would be encountered. Yield differences, on an as flown basis, would be higher than the percentage differences in fare.

1988 AVERAGE YIELD BY MARKET SHARE
And Distance Interval
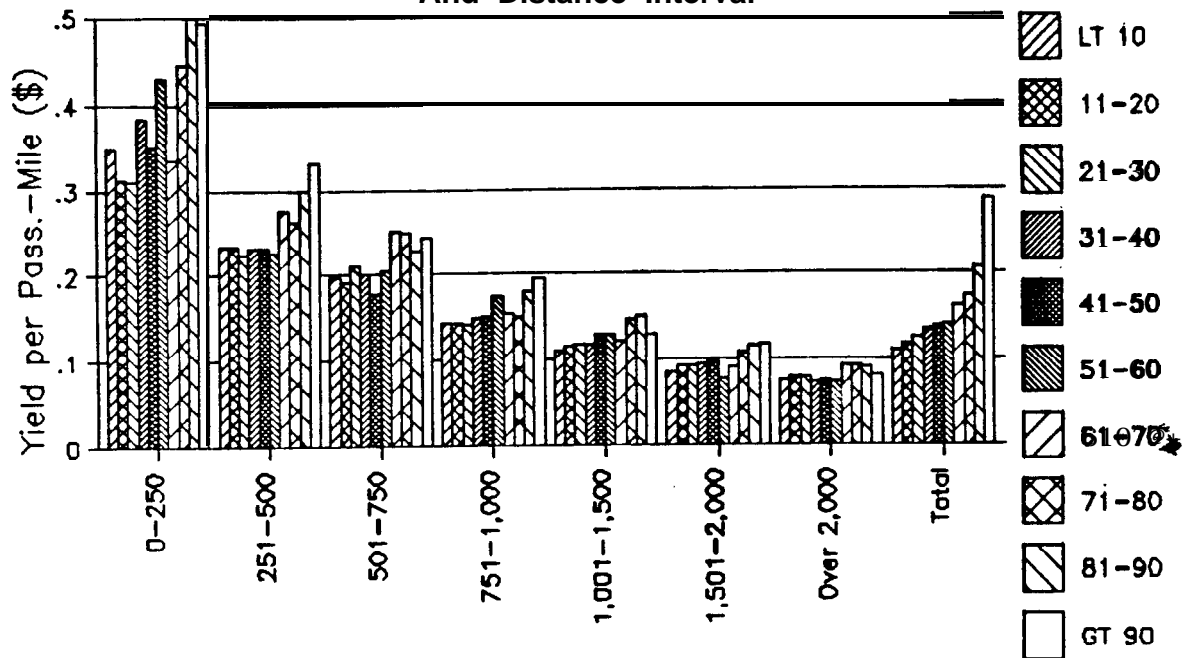
Distance interval

PASSENGERS BY MARKET SHARE
And Distance Interval

Distance Interval
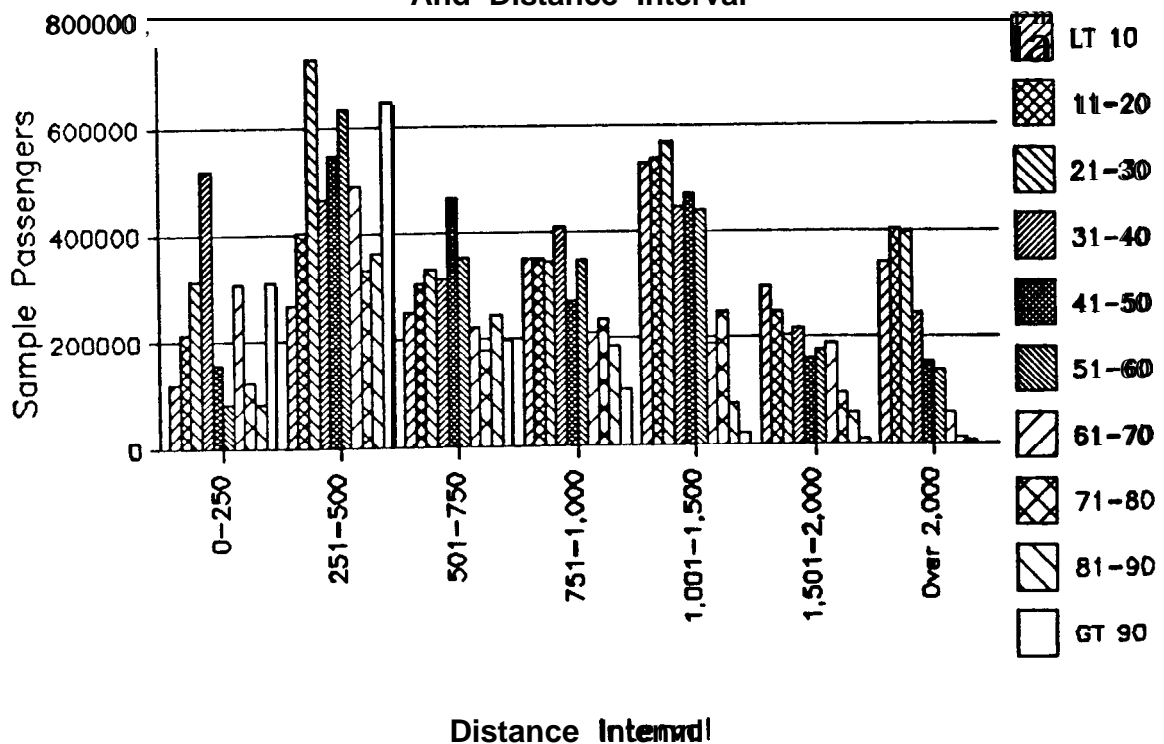
G. 1.   Industry Revenue by Competitive Status and
         and Market Share, 1979, 1984, and 1988

In the tables below we show the industry revenue by market competitive
class (markets, and revenue, classified by the number of carriers with
at least a ten-percent market share), and industry revenue by market
share (market share, and revenue, derived from individual carrier
market data.)

We found that industry revenue overall is now derived in more
competitive markets than in 1979 or 1984, both by market
classification or by individual carrier market share. Compare the
industry revenue by competitive class to the carrier revenue by market
share, below. Data are from Tables I-20 and I-21.

Industry Revenue Share by Competitive Class
1979, 1984, and 1988

| Competitive Class | Revenue Share | | |
	1979	1984	1988
Monopoly	20.3	10.7	14.2
2-Carrier	50.9	39.0	34.2
3-Carrier	25.0	38.7	30.5
4 or More	3.8	11.6	21.1
Total	100.0	100.0	100.0

Industry Revenue Share by Carrier Market Share
1979, 1984, and 1988

| Market Share% | Revenue Share | | |
	1979	1984	1988
Under 10	3.8	10.5	11.3
Ten-Twenty	4.9	9.7	13.0
Twenty-Thirty	9.1	14.4	15.3
Thirty-Forty	9.3	13.9	12.7
Forty-Fifty	14.3	11.6	10.9
Fifty-Sixty	11.7	11.1	10.8
Sixty-Seventy	13.4	11.8	8.4
Seventy-Eighty	10.2	5.6	6.8
Eighty-Ninety	6.9	4.1	5.6
Over Ninety	16.3	7.2	6.4
Total	99.9	99.9	100.2

G.2 Carrier Revenue by Market Share

In Section G.1 we described the increase in average yield that accompanied increases in market share for the industry in 1988. Above, we indicated that industry revenue (the sum of all carrier revenue) is derived from markets in which carriers have a smaller market share than in 1979 or 1984. On the following page we show the revenue distribution, by market share, for the eleven largest domestic carriers and the industry. The revenue distribution, by market share, closely follows the passenger distribution, by market share. Data are from Table I-25.

The distribution of revenue by market share by carrier shows considerable variation, both in the interval that has the highest (lowest) amount of revenue, as well as the general distribution of revenue across the market share intervals.

For example, Piedmont (first graph) shows a general increase in revenue by interval as the interval concentration increases, with over 25 percent of its revenue generated in monopoly markets (G.T. 90 percent). On the other hand, Trans World (second graph) has nearly 40 percent of its revenue generated in markets in which it has less than a 20 percent market share, declining markedly through the sixty percent market share interval, then increasing slowly to about ten percent in the monopoly interval. None of the carriers exhibit a statistically "normal" or bell-shaped distribution.

Eastern's revenue distribution is the most peaked. Nearly thirty percent of its revenue generated is in the 30-40 percent market share interval, and it is also the carrier with the lowest percentage of revenue generated in the above sixty percent market share intervals. USAir's distribution is the flattest, being close to a ten percent revenue share for each 10 percent market share interval, thus showing an even mix of competitive and non-competitive markets.

REVENUE CONTRIBUTION BY MARKET SHARE
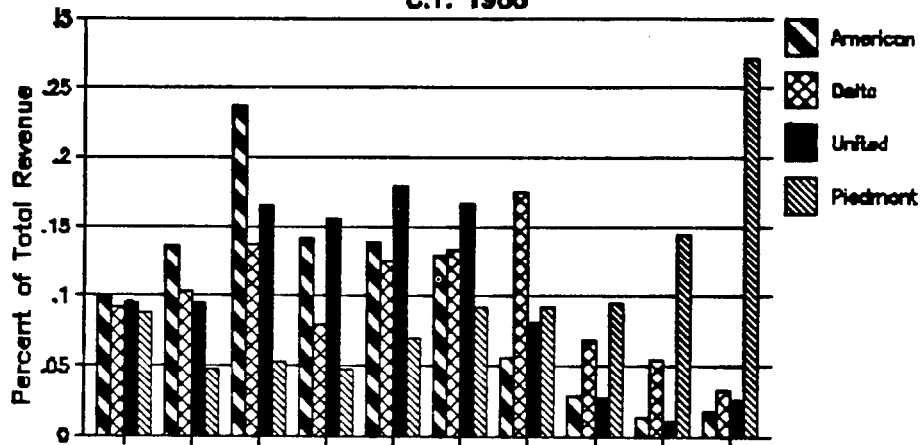
C.Y. 1988

REVENUE CONTRIBUTION BY MARKET SHARE
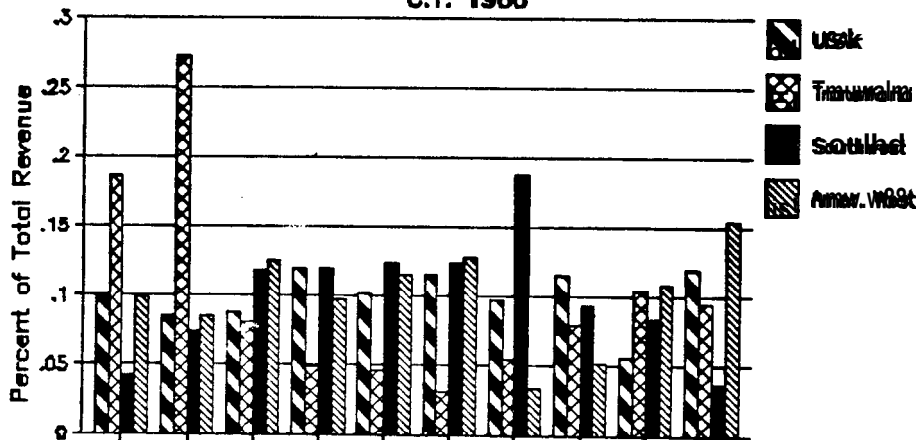
C.Y. 1988

REVENUE CONTRIBUTION BY MARKET SHARE

C.Y. 1988
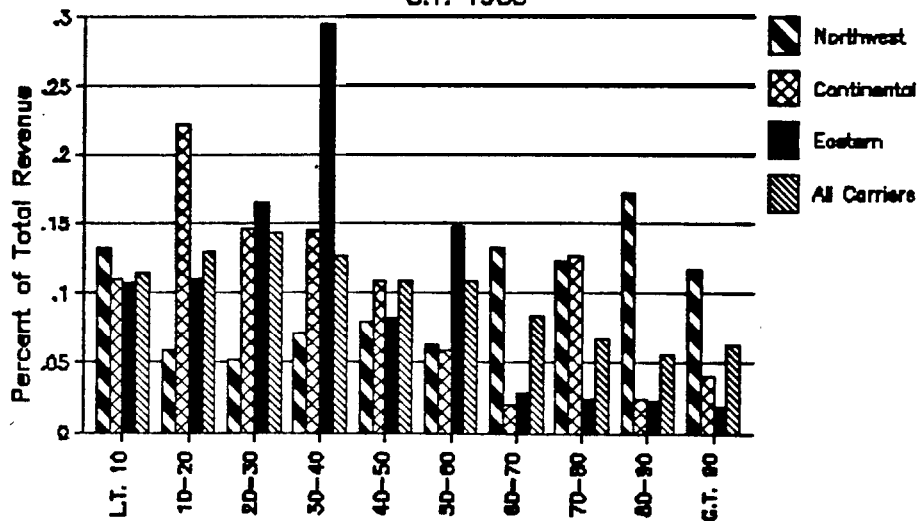
Market Share

AVERAGE FARES AND YIELDS BY FAA HUB CLASS

Table II-1

Average fares and yields for all points enplaning more than 200 passengers in 1988 were derived from the DOT Origin-Destination Survey data. These data cover the years 1979, 1984 and 1988 for 474 points. The points were categorized as large, medium or small hubs or nonhubs based on the 1988 DOT/FAA classifications. The O&D data are domestic summary data from Data Bank 1A, filtered to exclude extreme fare values, open-jaw trips, foreign trips, certain multi-coupon itineraries, and trips with a surface travel segment.

Average domestic air fares increased 41.5 percent between 1979 and 1988, from $96.19 in 1979 to $136.13 in 1988. The hub groups had different increases. Average fares at large and medium hubs increased less than at small and nonhubs. Average fares at large hubs rose 38.3 percent from $97.41 to $134.69. Average fares at medium hubs rose 38.9 percent, from $95.24 to $132.28. At small hubs average fares increased 59.4 percent, from $90.22 to $143.81, and at nonhubs average fares increased 61.4 percent, from $96.36 to $155.49. So the increases in fare were progressively higher as hub size declined. (See Table II-1.)

Just the reverse occurred in the 1984-1988 period. Large and medium hubs had increases in average fares and small hubs and nonhubs had decreases. Large hub average fares increased by 1.4 percent, medium hub fares increased by 2.6 percent, small hub fares decreased 0.5 percent, and nonhub fares decreased 6.1 percent. Overall, average fares increased by 1.2 percent.

Changes in average air fares reflect not only actual price increases but also increases that result from shifts in the "mix" of passenger trips. For many points these shifts, as indicated by changes in average mileage per passenger, were significant. This factor and its impact on measured price increases will be discussed in the following tables.

Nominal yields (passenger revenue per passenger mile) typically increased from 1979 to 1984 and then declined in 1988. Between 1979 and 1988, nonhubs had the greatest increase in yields (40.0 percent). Overall, yields were up 33.9 percent, or about 3.3 percent per year. Between 1984 and 1988, yields declined for all hub classes, with small hubs and nonhubs showing the greatest declines. Overall, yields in this period decreased 6.2 percent. The percent changes and average annual changes are shown below:

Hub Class	Percent Change		Average Annual Change	
	1979-88	1984-88	1979-88	1984-88
Large	34.0%	-5.3%	3.3%	-1.4%
Medium	28.9	-8.2	2.9	-2.1
Small	39.5	-9.1	3.8	-2.4
Nonhub	40.0	-9.3	3.8	-2.4
TOTAL	33.9	-6.2	3.3	-1.6

Increases in air fares in the 1979-1988 period were well below the trends of the two major measures of price level changes, the Consumer Price Index and the GNP Implicit Price Deflator. The overall change in average air fares of 41.5 percent compares with an increase of 62.9 percent in the Consumer Price Index (CPI-U) and a 54.8 percent increase in the GNP Implicit Price Deflator, two recognized measures of inflationary trends. The comparative measures, shown as indexes on a 1979 base, are as follows:

	Indexes, 1979=100		
	1979	1984	1988
Average Domestic Air Fare	100.0	139.8	141.5
Average Domestic Yield per RPM	100.0	142.9	133.9
Consumer Price Index, CPI(U)	100.0	143.0	162.9
GNP Implicit Price Deflator	100.0	137.0	154.8

Between 1984 and 1988, when average air fares increased 1.2 percent, the Consumer Price Index rose 13.9 percent and the GNP Implicit Price Deflator rose 13.0 percent.

The comparative percentage changes for these measures are shown below, both overall and in average annual rates:

	Percent Change		Average Annual Change	
	1979-88	1984-88	1979-88	1984-88
Average Domestic Air Fare	41.5%	1.2%	3.9%	0.3%
Average Domestic Yield per RPM	33.9	- 6.2	3.3	-1.6
Consumer Price Index, CPI(U)	62.9	13.9	5.6	3.3
GNP Implicit Price Deflator	54.8	13.0	5.0	3.1

AVERAGE FARES AND YIELDS BY FAA HUB CLASS
1979, 1984 and 1988

Hub Class	Average Fare ($)			Percent Change	
	1979	1984	1988	1988/1979	1988/1984
Large	$97.41	$132.86	$134.69	38.3%	1.4%
Medium	95.24	128.99	132.28	38.9	2.6
Small	90.22	144.47	143.81	59.4	- 0.5
Nonhub	96.36	165.57	155.49	61.4	- 6.1
Total	96.19	134.50	136.13	41.5	1.2

Hub Class	Average Yield (cents)			Percent Change	
	1979	1984	1988	1988/1979	1988/1984
Large	10.6¢	15.0¢	14.2¢	34.0%	- 5.3%
Medium	12.1	17.0	15.6	28.9	- 8.2
Small	12.9	19.8	18.0	39.5	- 9.1
Nonhub	14.0	21.6	19.6	40.0	- 9.3
Total	11.2	16.0	15.0	33.9	- 6.2

Comparative Measures of Price Change

	1979	1984	1988	Percent Change	
				1988/1979	1988/1984
Consumer Price Index CPI(U), 1979 = 100	100.0	143.0	162.9	62.9	13.9
GNP Implicit Price Deflator, 1979 = 100	100.0	137.0	154.8	54.8	13.0

CHANGES IN AVERAGE FARES, LARGE HUBS, 1979-1988

Tables II-2 and II-3

Changes in average air fares at large hubs between 1979 and 1988 ranged from 109.9 percent at Memphis, Tennessee to a decrease of 15.4 percent at Phoenix, Arizona. These compare with a national average of 41.5 percent. The 109.9 percent increase for Memphis, the highest of the large hubs, exceeds the increase in the Consumer Price Index for this period, which was 62.9 percent. The 109.9 percent increase averages about 8.6 percent per year while the CPI increased at about 5.6 percent per year. (Table II-2).

As Chart II-A below shows, the highest fare increases occurred at highly concentrated hubs such as Memphis, Charlotte, Salt Lake City, Pittsburgh and Minneapolis/St. Paul, and hubs with a dominant carrier share of 50 to 75 percent, such as Atlanta and Baltimore. In some cases the increases in average fare are due in part to increases in average passenger mileage. For example, the average fare at Salt Lake City rose 75.8 percent, from $95.19 to $167.32. Average passenger trip mileage increased from 835 miles in 1979 to 1,014 miles in 1988--a 21.4 percent increase. Based on the July 1, 1988 SIFL formula this 21.4 percent increase in mileage would yield a fare increase of 14.5 percent, so a mileage-adjusted fare increase would be about 61.3 percent (75.8 minus 14.5).
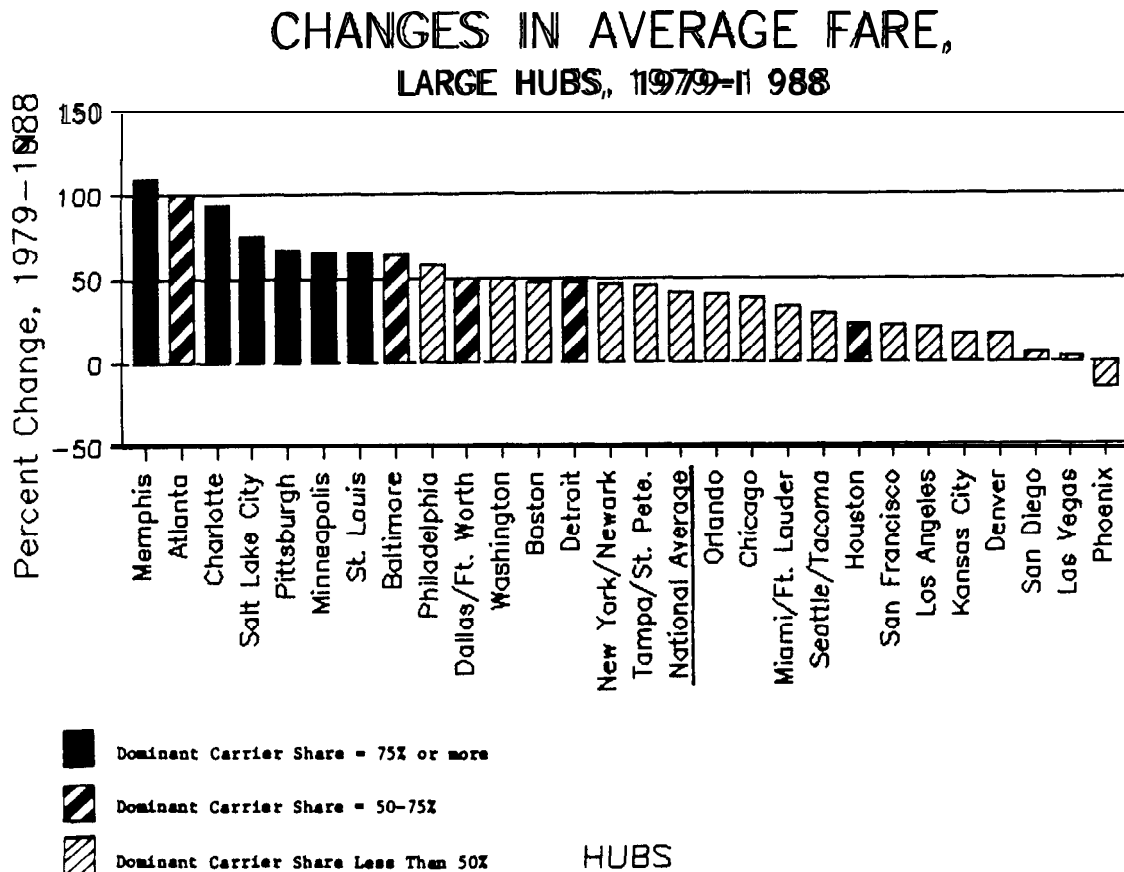
CHANGES IN AVERAGE FARE, LARGE HUBS, 1979-1988

Dominant Carrier Share = 75% or more

Dominant Carrier Share = 50-75%

Dominant Carrier Share Less Than 50%

HUBS

CHANGES IN AVERAGE FARE, LARGE HUBS, 1979-1988
(Hubs Arrayed in Descending Order by Percent Change)

Large Hubs	Average Fare ($) 1979	Average Fare ($) 1988	Percent Change 1979-1988
Memphis, TN	$ 83.80	$ 175.88	109.9%
Atlanta, GA	84.96	170.38	100.5
Charlotte, NC	82.05	159.07	93.9
Salt Lake City, UT	95.19	167.32	75.8
Pittsburgh, PA	78.21	130.61	67.0
Minneapolis/St. Paul, MN	96.45	159.75	65.6
St. Louis, MO	87.90	145.32	65.3
Baltimore, MD	90.20	147.79	63.8
Philadelphia, PA	96.05	151.85	58.1
Dallas/Ft. Worth, TX	92.54	138.93	50.1
Washington, DC	90.44	135.32	49.6
Boston, MA	93.03	137.73	48.0
Detroit, MI	84.85	125.31	47.7
New York/Newark, NJ	96.21	141.38	46.9
Tampa/St. Petersburg, FL	90.73	132.00	45.5
National Average	96.18	136.13	41.5
Orlando, FL	83.91	117.82	40.4
Chicago, IL	90.82	125.69	38.4
Miami/Ft. Lauderdale, FL	98.76	131.53	33.2
Seattle/Tacoma, WA	119.20	154.79	29.9
Houston, TX	104.63	128.42	22.7
San Francisco/Oakland, CA	113.07	137.26	21.4
Los Angeles/Burbank/Long Beach, CA	115.02	138.28	20.2
Kansas City, MO	96.92	113.31	16.9
Denver, CO	111.48	130.05	16.7
San Diego, CA	109.31	114.92	5.1
Las Vegas, NV	91.47	93.99	2.8
Phoenix, AZ	114.92	97.19	-15.4

Source: Origin-Destination Survey of Airline Passenger Traffic-Domestic.

Average fares at the 27 large hubs in 1979 ranged from $78.21 at Pittsburgh to $119.20 at Seattle/Tacoma. In 1988, average fares ranged from $93.99 at Las Vegas to $175.88 at Memphis. The range between the high and low fares widened from 52 percent in 1979 to 87 percent in 1988.

Table II-3 and Chart II-B show the distribution of fare changes at the large hubs. Six hubs were in the 40.0 to 49.9 percent group, the modal group. In terms of the national average increase of 41.5 percent, 15 hubs were above the average and 12 were below.
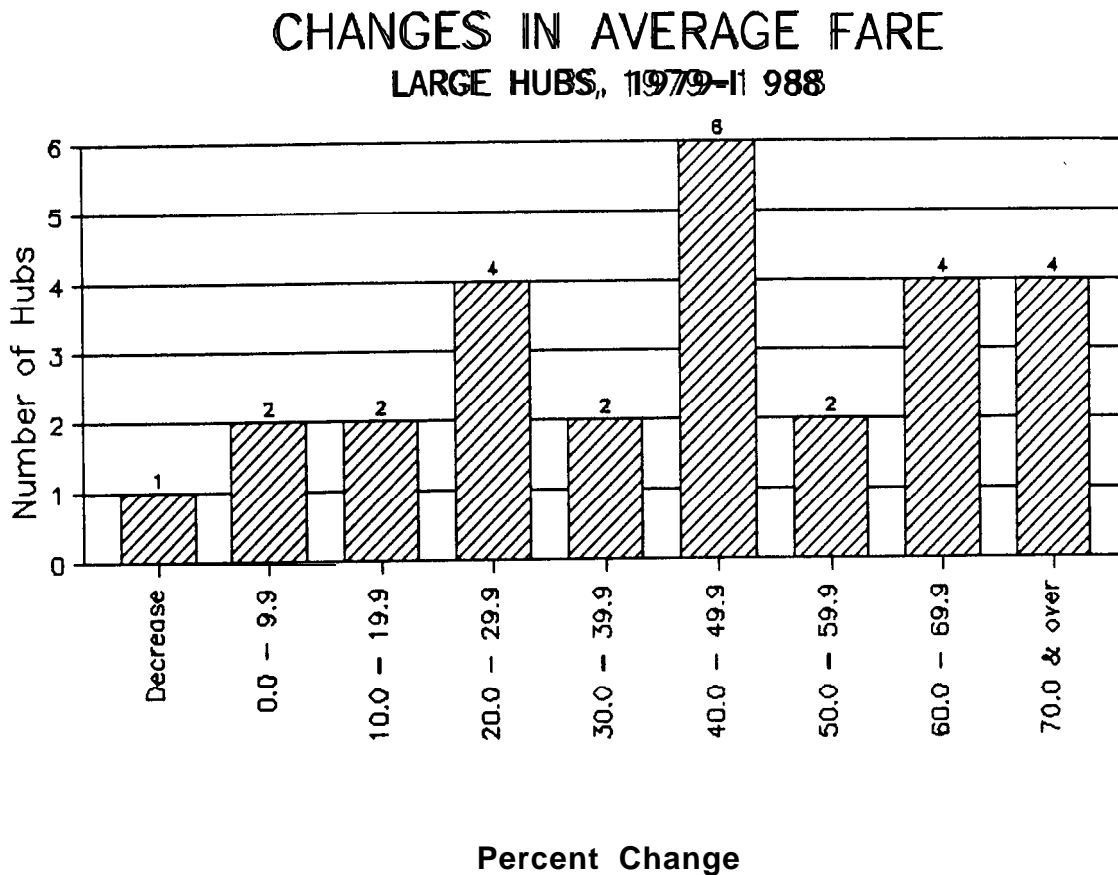
CHANGES IN AVERAGE FARE
LARGE HUBS, 1979-1 988

Percent Change

CHANGE IN AVERAGE FARE, LARGE HUBS, 1979-1988

Percent Change, 1979-1988	Number of Large Hubs	Percent of Large Hubs*
Decrease	1	3.7
0.0 - 9.9	2	7.4
10.0 - 19.9	2	7.4
20.0 - 29.9	4	14.8
30.0 - 39.9	2	7.4
40.0 - 49.9	6	22.2
50.0 - 59.9	2	7.4
60.0 - 69.9	4	14.8
70.0 & over	4	14.8
Total	27	100.0

_____

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE FARES, MEDIUM HUBS, 1979-1988

Tables II-4 and II-5

Changes in average air fares at the medium hubs between 1979 and 1988 ranged from 103.7 percent at Cincinnati to a decrease of 19.2 percent at El Paso. These compare with a national average of 41.5 percent. The 103.7 percent fare increase for Cincinnati averages about 8.2 percent per year, which is higher than the rate of increase in the Consumer Price Index for this period of 5.6 percent per year. (Table II-4).

The top two increases occurred at Cincinnati and Dayton, highly concentrated hubs. (Chart II-C). As in the case of some large hubs, however, Cincinnati had a large increase in average passenger mileage (16.6 percent), indicating a significant shift in the market mix.
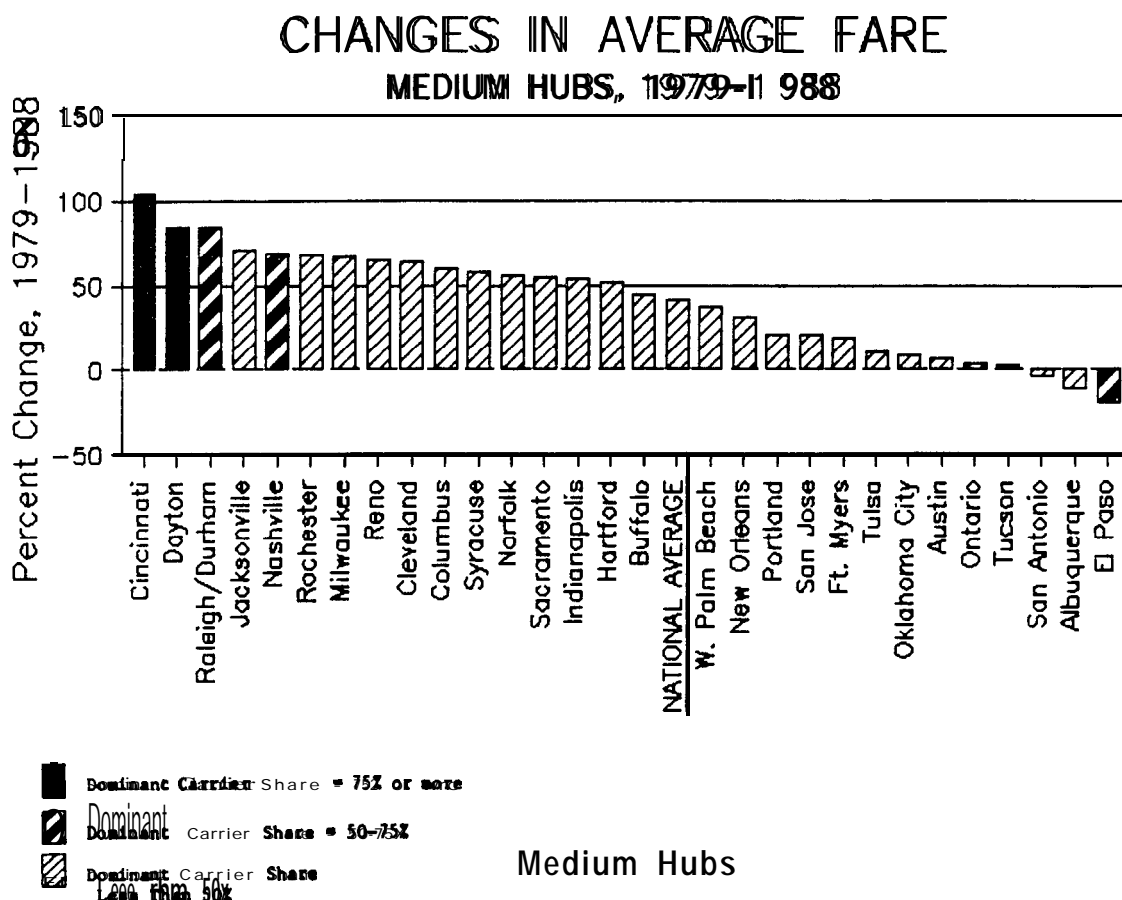
CHANGES IN AVERAGE FARE
MEDIUM HUBS, 1979-1988

Medium Hubs

CHANGES IN AVERAGE FARE, MEDIUM HUBS, 1979-1988
(Hubs Arrayed in Descending Order by Percent Change)

Medium Hubs	Average Fare ($)		Percent Change, 1979-1988
	1979	1988	
Cincinnati, OH	$ 82.91	$ 168.85	103.7%
Dayton, OH	89.56	165.55	84.8
Raleigh/Durham, NC	84.04	155.06	84.5
Jacksonville, FL	89.54	153.15	71.0
Nashville, TN	85.57	144.86	69.3
Rochester, NY	79.31	133.06	67.8
Milwaukee, WI	87.41	146.19	67.2
Reno, NV	69.91	115.55	65.3
Cleveland, OH	79.38	130.04	63.8
Columbus, OH	84.13	134.68	60.1
Syracuse, NY	85.30	134.42	57.6
Norfolk, VA	80.02	124.83	56.0
Sacramento, CA	86.93	134.87	55.1
Indianapolis, IN	86.88	133.29	53.4
Hartford, CT	98.80	150.03	51.9
Buffalo/Niagara Falls, NY	79.23	114.39	44.4
National Average	96.18	136.13	41.5
West Palm Beach, FL	101.10	138.84	37.3
New Orleans, LA	98.84	129.77	31.3
Portland, OR	119.31	153.74	28.9
San Jose, CA	108.02	130.88	21.2
Ft. Myers, FL	105.69	125.45	18.7
Tulsa, OK	106.24	118.18	11.2
Oklahoma City, OK	109.21	118.39	8.4
Austin, TX	105.07	111.65	6.3
Ontario, CA	120.12	124.46	3.6
Tucson, AR	121.14	124.25	2.6
San Antonio, TX	118.68	113.85	- 4.1
Albuquerque, NM	121.70	108.27	-11.0
El Paso, TX	137.15	110.85	-19.2

Source: Origin-Destination Survey or Airline Passenger Traffic - Domestic.

Average fares at the 29 medium hubs in 1979 ranged from $69.91 at Reno to $137.15 at El Paso. In 1988, average fares ranged from $108.27 at Albuquerque, New Mexico to $168.85 at Cincinnati. Unlike large hubs, the range between high and low fares narrowed from 96 percent in 1979 to 56 percent in 1988.

Table II-5 and Chart II-D show the distribution of fare changes at the medium hubs. The modal group was the 60.0 to 69.9 percent group, which contained 6 hubs. In terms of the national average of 41.5 percent, 16 hubs were above the average and 13 were below.
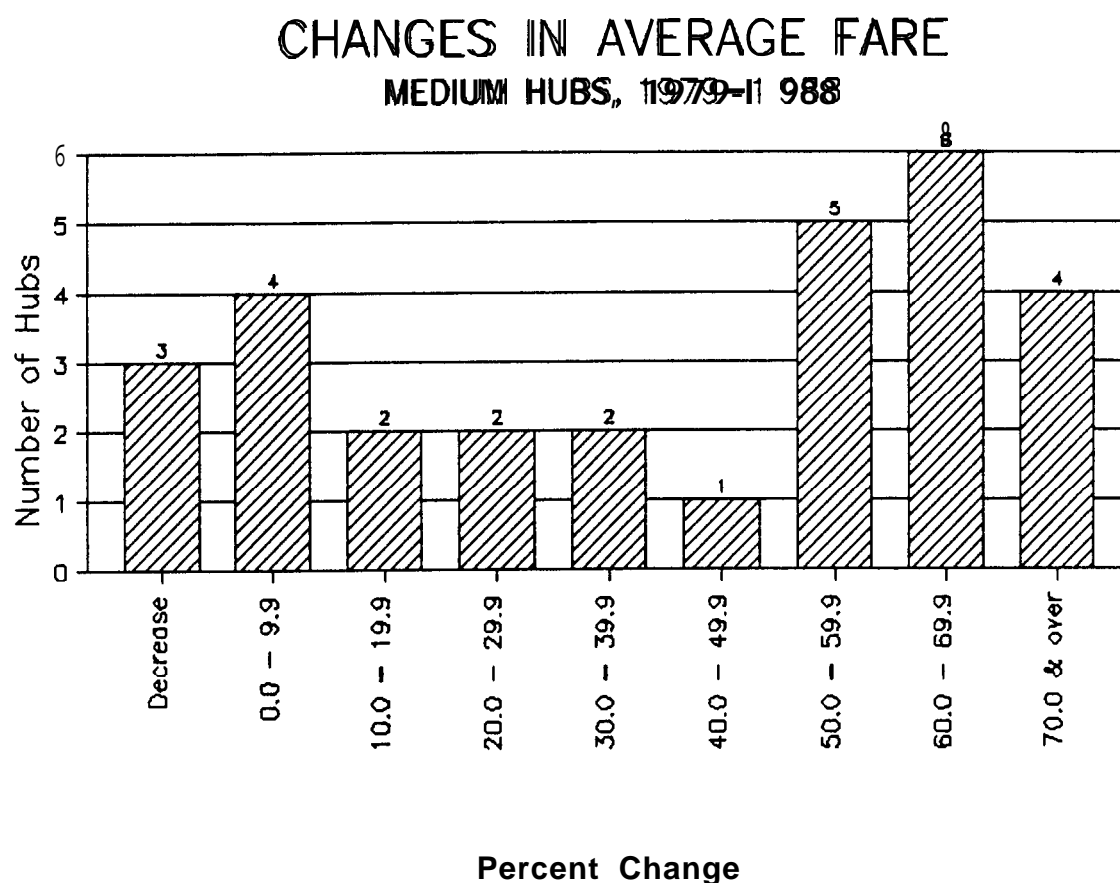
CHANGES IN AVERAGE FARE
MEDIUM HUBS, 1979-1 988

Percent Change

CHANGE IN AVERAGE FARE, MEDIUM HUBS, 1979-1988

Percent Change, 1979-1988	Number of Medium Hubs	Percent of Medium Hubs*
Decrease	3	10.3
0.0 - 9.9	4	13.8
10.0 - 19.9	2	6.9
20.0 - 29.9	2	6.9
30.0 - 39.9	2	6.9
40.0 - 49.9	1	3.4
50.0 - 59.9	5	19.2
60.0 - 69.9	6	20.7
70.0 & over	4	13.8
Total	29	100.0

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE FARES, SMALL HUBS, 1979-1988

Tables II-6 and II-7

Changes in average air fares at the small hubs between 1979 and 1988 ranged from 112.7 percent at Huntsville, Alabama to a decrease of 21.9 percent at Midland/Odessa, Texas. The fare increase at Huntsville averaged 8.7 percent per year, a rate considerably higher than the rate of increase in the Consumer Price Index for this period of 5.6 percent per year. (Table II-6).

Fare increases at the more concentrated hubs did not appear to be particularly higher than normal. (Chart II-E).

CHANGES IN AVERAGE FARE
SMALL HUBS, 1979-1988

Dominant Carrier Share = 75% or more

Dominant Carrier Share = 50-75%

Dominant Carrier Share Less Than 50%
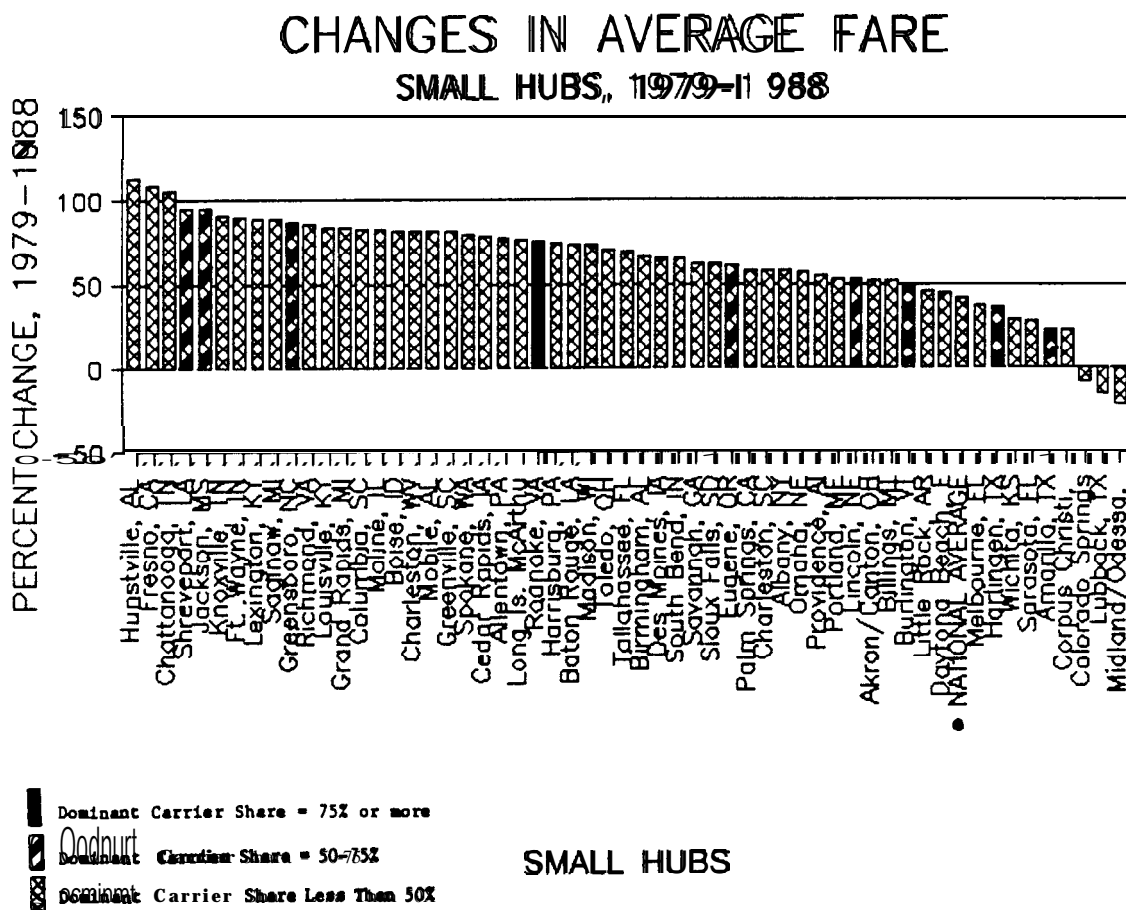
SMALL HUBS

Average fares at the 56 small hubs in 1979, ranged from $67.51 at Long Island MacArthur (Islip), N.Y., to $159.16 at Colorado Springs, Colorado. In 1988, average fares ranged from $80.80 at Lubbock, Texas to $208.72 at Huntsville, Alabama. The range between high and low fares widened from 136 percent in 1979 to 158 percent in 1988.

CHANGES IN AVERAGE FARE, SMALL HUBS, **1979-1988**
(Hubs Arrayed in Descending Order by Percent Change)

Small Hubs	Average Fare ($)		Percent Change 1979-1988
	1979	1988	
Huntsville, AL	$ 98.13	$ 208.72	112.7%
Fresno, CA	72.89	152.12	108.7
Chattanooga, TN	87.34	179.50	105.5
Shreveport, LA	85.90	167.25	94.7
Jackson, MS	88.61	172.41	94.6
Knoxville, TN	84.10	160.96	91.4
Ft. Wayne, IN	86.29	163.73	89.7
Lexington, KY	84.42	159.69	89.2
Saginaw/Bay City, MI	87.11	164.10	88.4
Greensboro, NC	83.50	155.82	86.6
Richmond, VA	86.44	160.89	86.1
Louisville, KY	82.56	152.01	84.1
Grand Rapids, MI	82.75	152.15	83.9
Columbia, SC	86.46	158.07	82.8
Moline, IL	85.98	156.66	82.2
Boise, ID	90.68	164.79	81.7
Charleston, WV	80.39	146.10	81.7
Mobile, AL	92.08	167.21	81.6
Greenville, SC	89.09	161.41	81.2
Spokane, WA	87.41	156.65	79.2
Cedar Rapids, IA	88.39	157.38	78.1
Allentown, PA	90.59	161.01	77.7
Long Island MacArthur, NY	67.51	119.19	76.6
Roanoke, VA	82.68	144.87	75.2
Harrisburg, PA	89.13	155.45	74.4
Baton Rouge, LA	93.22	162.08	73.9
Madison, WI	88.98	154.28	73.4
Toledo, OH	84.39	144.03	70.7
Tallahassee, FL	79.28	134.17	69.2
Birmingham, AL	83.82	139.70	66.7
Des Moines, IA	88.48	146.45	65.5
South Bend, IN	88.77	146.84	65.4
Savannah, GA	88.11	143.06	62.4

CHANGES IN AVERAGE FARE, SMALL HUBS, 1979-1988
(Hubs Arrayed in Descending Order by Percent Change)

Small Hubs	Average Fare ($)		Percent Change, 1979-1988
	1979	1988	
Sioux Falls, SD	$ 94.18	$1S2.91	62.4
Eugene, OR	98.20	158.25	61.2
Palm Springs, CA	108.08	170.86	58.1
Charleston, SC	87.92	138.73	57.8
Albany, NY	90.73	142.95	57.6
Omaha, NE	91.56	144.00	57.3
Providence, RI	88.41	137.09	55.1
Portland, ME	88.91	136.09	53.1
Lincoln, NE	94.87	144.86	52.7
Akron/Canton, OH	80.00	121.08	51.4
Billings, MT	99.17	150.06	51.3
Burlington, VT	86.87	129.87	49.5
Little Rock, AR	89.21	129.82	45.5
Daytona Beach, FL	87.54	126.82	44.9
National Average	96.18	136.13	41.5
Melbourne, FL	103.64	142.70	37.7
Harlingen, TX	75.92	103.32	36.1
Wichita, KS	120.43	155.66	29.3
Sarasota/Bradenton, FL	99.78	127.35	27.6
Amarillo, TX	82.80	102.00	23.2
Corpus Christi, TX	91.59	112.54	22.9
Colorado Springs, CO	159.16	145.70	- 8.5
Lubbock, TX	95.65	80.80	-15.5
Midland/Odessa, TX	110.35	86.17	-21.9

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Table **II-7** and Chart II-F show the distribution of fare changes at the small hubs. Thirty-eight of the changes were **concentrated** between **50.0** and **89.9** percent, with the **80.0-89.9** percent group being the modal group. In terms of the national average of **41.5** percent, **47** small hubs were above the average and 9 were below.

CHANGES IN AVERAGE FARE
SMALL HUBS, 1979-1988
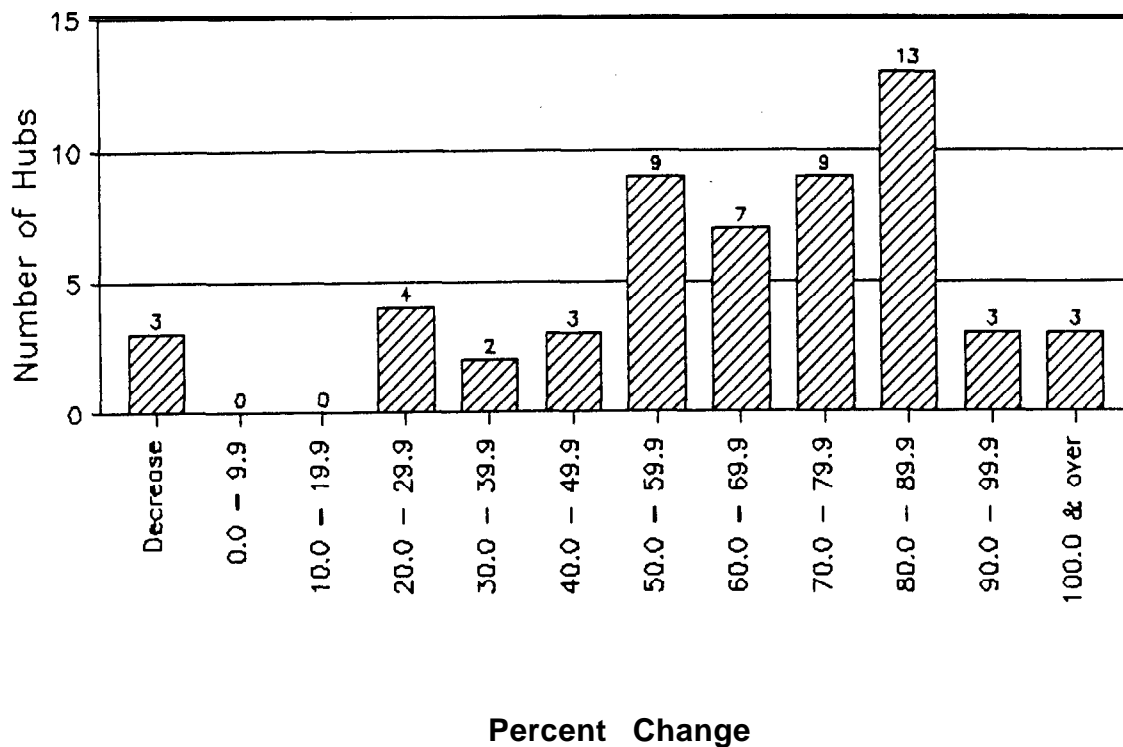
Percent Change

CHANGE IN AVERAGE FARE, SMALL HUBS, 1979-1988

Percent Change, 1979-1988	Number of Small Hubs	Percent of Small Hubs*
Decrease	3	5.4
0.0 - 9.9	0	0.0
10.0 - 19.9	0	0.0
20.0 - 29.9	4	7.1
30.0 - 39.9	2	3.6
40.0 - 49.9	3	5.4
50.0 - 59.9	9	16.1
60.0 - 69.9	7	12.5
70.0 - 79.9	9	16.1
80.0 - 89.9	13	23.2
90.0 - 99.9	3	5.4
100.0 & over	3	5.4
Total	56	100.0

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE FARES, NONHUBS, 1979-1988

Tables II-8 and II-9

Changes in average air fares at the nonhubs between 1979 and 1988 ranged from 466.8 percent at Ottumwa, Iowa to a decrease of 30.9 percent at Walla Walla, Washington. These smaller points are more susceptible to large changes in the market mix and many are represented by relatively small numbers of sample tickets so changes *can* be expected to be *more* volatile than at the hubs.

The nonhub group contains 362 cities. These have not been arrayed as in the case of the hubs, but full data for each are shown in Appendix II-1. Table II-8 lists the 18 nonhubs having the highest increases (150 percent or more). As can be seen, a number of these have relatively small numbers of sample tickets.

Average fares at the 362 nonhubs in 1979 ranged from $36.55 at Ottumwa, Iowa to $263.50 at Marshall, Minnesota. In 1988, average fares ranged from $45.75 at New Bedford, Massachusetts to $323.95 at Camden, Arkansas. The range between high and low fares narrowly slightly from 621 percent in 1979 to 608 percent in 1988.

Table II-9 and Chart II-G show the distribution of fare changes at the nonhubs. The modal group was the 70.0-79.9 percent group, which included 47 points. In terms of the national average of 41.5 percent, 287 nonhubs were above the average and 75 were below.

CHANGES IN AVERAGE FARE
NONHUBS, 1979-1988
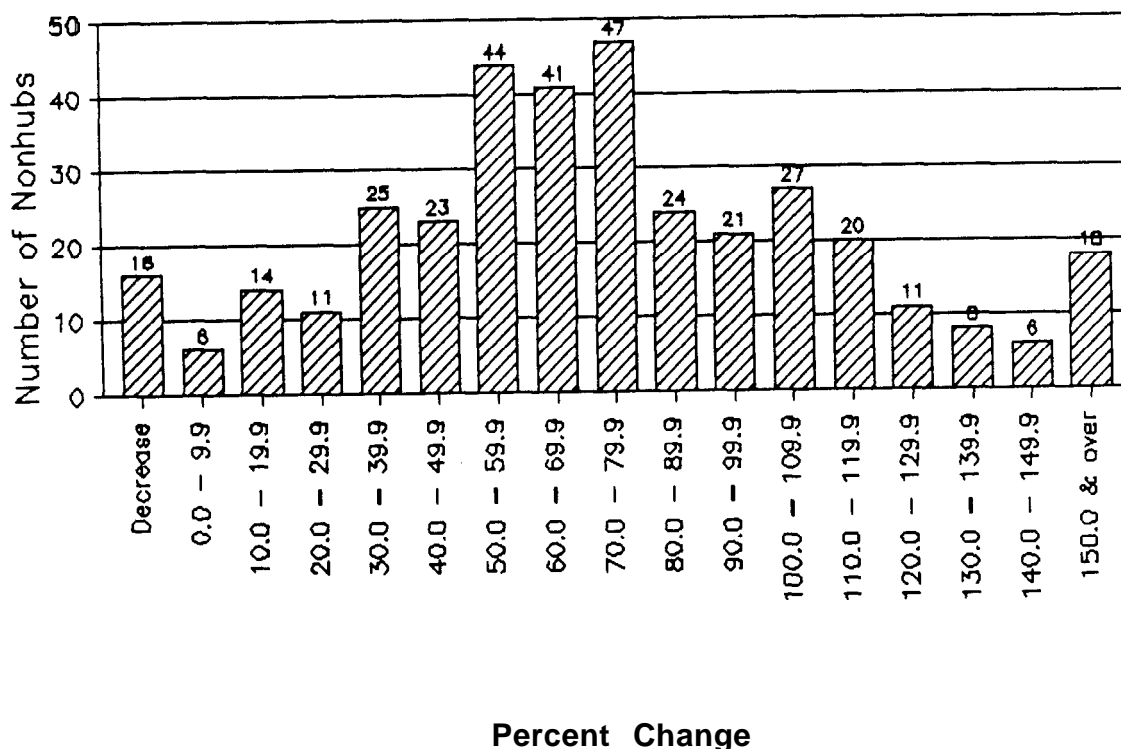
Percent Change

NONHUBS WITH INCREASES IN AVERAGE FARES
OF 150 PERCENT OR MORE, 1979-1988
(Arrayed in Descending Order by Percent Change)

City	Sample Passengers		Average Fares ($)		Percent Change
	1979	1988	1979	1988	1979-1988
Ottumwa, IA	220	30	$ 36.55	$207.17	466.8
Mount Vernon, IL	435	26	56.47	216.65	283.7
Borrego Springs, CA	1	24	60.00	213.42	255.7
Madawaska/Ft. Kent, ME	10	20	62.80	186.55	197.1
Cumberland, ME	167	67	91.43	267.52	192.6
Ely, NV	313	101	84.63	246.96	191.8
Bullhead City, Az	7	187	53.00	151.19	185.3
White Plains, NY	3,943	34,704	49.81	139.47	180.0
Cedar City, UT	324	305	79.53	218.99	175.4
Visalia, CA	1,630	1,551	49.50	135.28	173.3
Elko, NV	1,030	1,409	91.22	248.88	172.8
Laconia, NH	508	41	76.21	204.73	168.6
Montpelier/Barre, VT	472	96	46.94	123.75	163.6
Jackson, TN	1,869	990	82.72	215.16	160.1
Burlington, IA	4,315	1,353	91.35	233.39	155.5
Kokomo, IN	2	21	103.00	262.29	154.7
Gadsden, AL	328	81	90.94	228.52	151.3
Garden City, KS	562	111	121.49	304.60	150.7

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

CHANGE IN AVERAGE FARE, NONHUBS, 1979-1988

Percent Change, 1979-1988	Number of Nonhubs	Percent of Nonhubs*
Decrease	16	4.4
0.0 - 9.9	6	1.7
10.0 - 19.9	14	3.9
20.0 - 29.9	11	3.0
30.0 - 39.9	25	6.9
40.0 - 49.9	23	6.4
50.0 - 59.9	44	12.2
60.0 - 69.9	41	11.3
70.0 - 79.9	47	13.0
80.0 - 89.9	24	6.6
90.0 - 99.9	21	5.8
100.0 - 109.9	27	7.5
110.0 - 119.9	20	5.5
120.0 - 129.9	11	3.0
130.0 - 139.9	a	2.2
140.0 - 149.9	6	1.7
150.0 & over	la	5.0
Total	362	100.0

* Percentages do not add to 100.0 due to rounding.

NUMBER-AND PERCENT OF HUBS AND NONHUBS HAVING CHANGES IN
AVERAGE FARES BELOW AND ABOVE NATIONAL AVERAGE 1979-1988

Table II-10

Large hubs, which have a great impact on the national average
fare increase, were fairly evenly divided, with 12 below the average
and 15 above. Medium hubs had 13 below average and 16 above. Small
hubs had 9 below average (16 percent) and 47 above (84 percent).
Nor-hubs had 75 below average (21 percent) and 287 above (77 percent).
Of the 474 points, 109, or 23 percent, had a fare change below the
national average, while 365, or 77 percent, had a change above the
average.

NUMBER AND PERCENT OF HUBS AND NONHUBS HAVING CHANGES
IN AVERAGE FARES BELOW AND ABOVE NATIONAL AVERAGE
1979-1988

Hub Class	Number of Hubs		Percent of Hubs	
	Below Average	Above Average	Below Average	Above Average
Large	12	15	44%	56%
Medium	13	16	45	55
Small	9	47	16	84
Nonhub	75	287	21	79
Total	109	365	23	77

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

CHANGES IN AVERAGE FARES LARGE HUBS, 1984-1988

Tables II-11 and II-12

        Changes in average air fares at large hubs between 1984 and 1988 ranged from 30.1 percent at Houston to a decrease of 17.5 percent at Chicago. These compare with a national average of 1.2 percent. The 30.1 percent increase for Houston averages 6.8 percent per year, which is higher than the increase in the Consumer Price Index, which averaged 3.3 percent per year. (Table II-11)..

        Chart II-H arrays the fare changes for the large hubs. Most of the concentrated hubs were above the national average increase of 1.2 percent: Houston, Dallas/Ft. Worth, Baltimore, Minneapolis/ St. Paul, Memphis, Salt Lake City, Charlotte, Pittsburgh and St. Louis. Atlanta and Detroit were below.
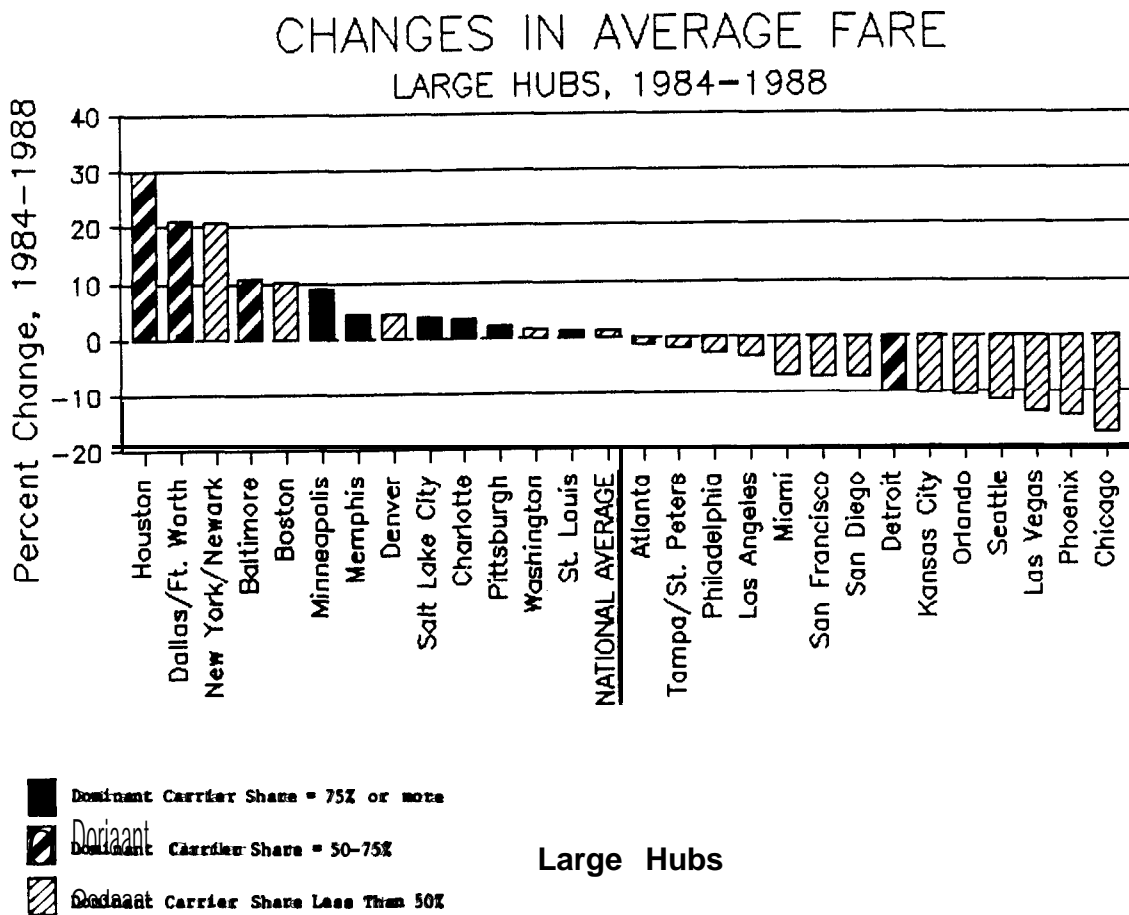
CHANGES IN AVERAGE FARE
LARGE HUBS, 1984-1988

Dominant Carrier Share = 75% or more

Dominant Carrier Share = 50-75%

Dominant Carrier Share Less Than 50%

Large Hubs

CHANGES IN AVERAGE FARE, LARGE HUBS, 1984-1988
(Hubs Arrayed in Descending Order by Percent Change)

| Large Hubs | Average Fare ($)-- | | Percent Change, 1984-1988 |
	1984	1988	
Houston, TX	$ 98.71	$ 128.42	30.1%
Dallas/Ft. Worth, TX	114.66	138.93	21.2
New York/Newark, NJ	117.01	141.38	20.8
Baltimore, MD	133.23	147.79	10.9
Boston, MA	124.89	137.73	10.3
Minneapolis/St. Paul, MN	146.42	159.75	9.1
Memphis, TN	168.50	175.88	4.4
Denver, CO	124.74	130.05	4.3
Salt Lake City, UT	161.38	167.32	3.7
Charlotte, NC	153.66	159.07	3.5
Pittsburgh, PA	128.10	130.61	2.0
Washington, DC	133.27	135.32	1.5
St. Louis, MO	143.45	145.32	1.3
National Average	134.51	136.13	1.2
Atlanta, GA	172.81	170.38	- 1.4
Tampa/St. Petersburg, FL	134.75	132.00	- 2.0
Philadelphia, PA	156.11	151.85	- 2.7
Los Angeles/Burbank/Long Beach, CA	143.09	138.28	- 3.4
Miami/Ft. Lauderdale, FL	141.26	131.53	- 6.9
San Francisco/Oakland, CA	147.63	137.26	- 7.0
San Diego, CA	123.65	114.92	- 7.1
Detroit, MI	139.16	125.31	-10.0
Kansas City, MO	126.00	113.31	-10.1
Orlando, FL	131.65	117.82	-10.5
Seattle/Tacoma, WA	174.66	154.79	-11.4
Las Vegas, NV	108.69	93.99	-13.5
Phoenix, AZ	113.57	97.19	-14.4
Chicago, IL	152.39	125.69	-17.5

Source: Origin-Destination Survey of Airline Passenger Traffic-Domestic.

Average fares at the 27 large hubs in 1984 ranged from $98.71 at Houston to $174.66 at Seattle/Tacoma. In 1988, average fares ranged from $93.99 at Las Vegas to $175.88 at Memphis. The range between the high and low fares widened from 77 percent in 1984 to 87 percent 1988.

Table II-12 and Chart II-I show the distribution of fare changes at the large hubs. Fourteen hubs (52 percent) had decreases in average fares. Eight fell in the 0.0 to 9.9 percent group and five had increases exceeding 10 percent. In terms of the national average of 1.2 percent, 13 large hubs were above the average and 14 were below.
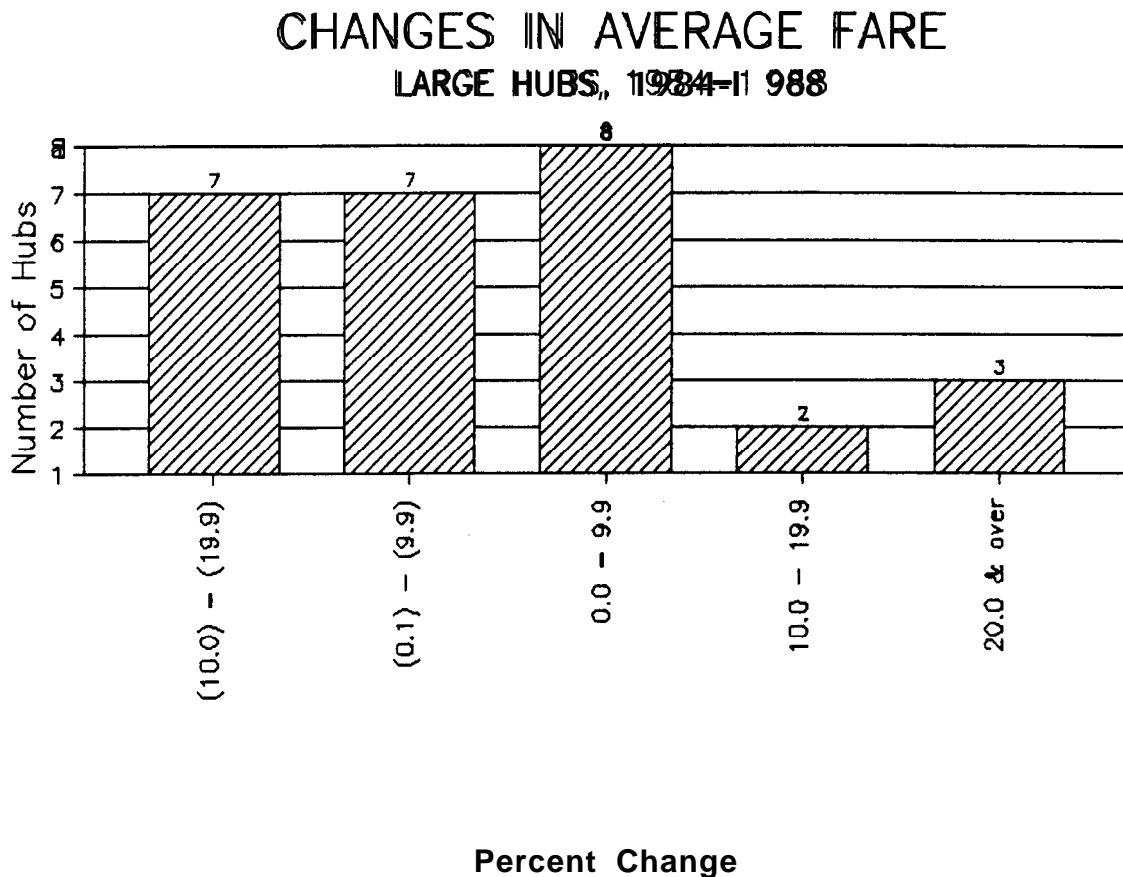
CHANGES IN AVERAGE FARE
LARGE HUBS, 1984-1 988

Percent Change

CHANGE IN AVERAGE FARE, LARGE HUBS, 1984-1988

Percent Change, 1984-1988	Number of Large Hubs	Percent of Large Hubs*
(10.0) - (19.9)	7	25.9
(0.1) - (9.9)	7	25.9
0.0 - 9.9	8	29.6
10.0 - 19.9	2	7.4
20.0 & over	3	11.1
Total	27	100.0

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE FARES MEDIUM HUBS 1984-1988

Tables II-13 and II-14

Changes in average air fares at the medium hubs between 1984 and 1988 ranged from 24.8 percent at Norfolk, Virginia, to a decrease of 27.1 percent at Ft. Myers, Florida. The 24.8 percent fare increase for Norfolk averages about 5.7 percent per year, which is above the rate for the Consumer Price Index for the period of 3.3 percent per year. (Table II-13).

Two concentrated hubs had fare changes above the national average: Raleigh/Durham and Cincinnati. (Chart II-J).

CHANGES IN AVERAGE FARE
MEDIUM HUBS, 1984-1988
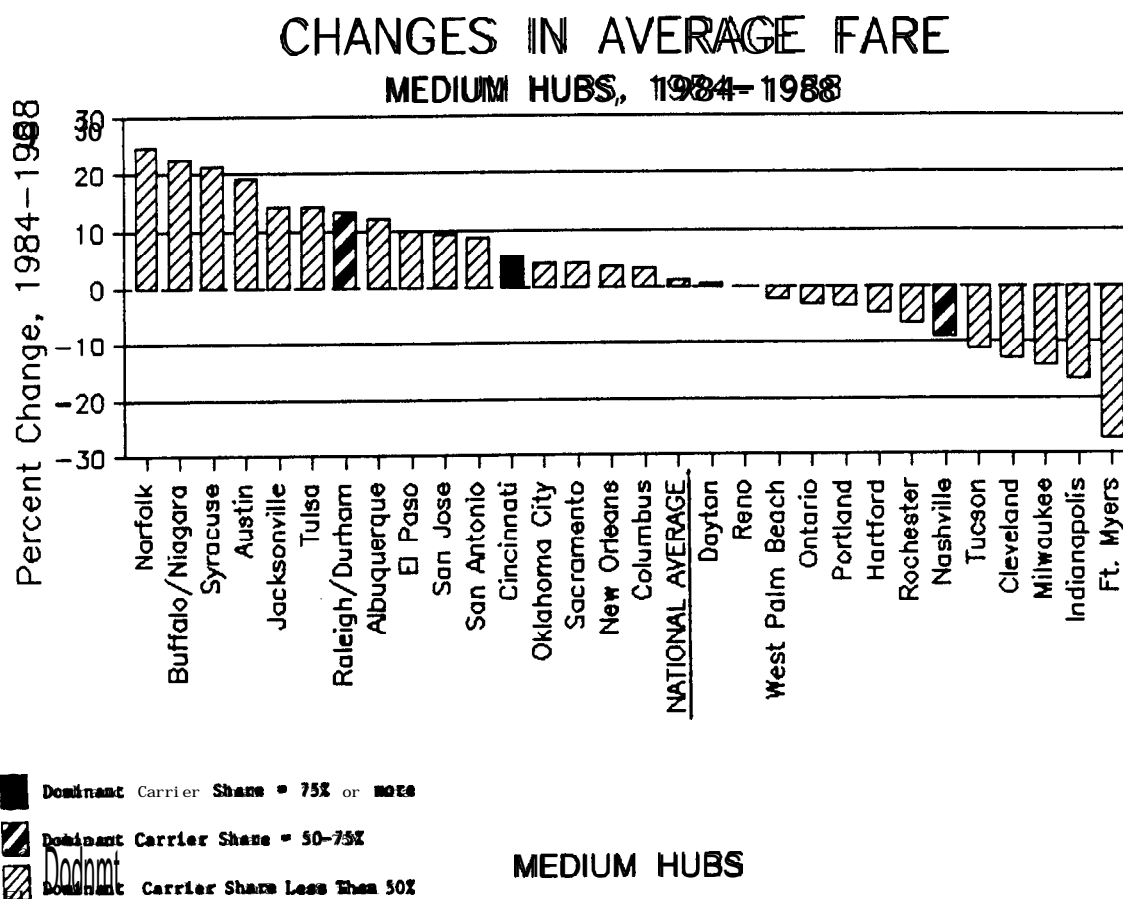
MEDIUM HUBS

Average fares at the 29 medium hubs in 1984 ranged from $93.31 at Buffalo/Niagara Falls to $172.10 at Ft. Myers, Florida. In 1988, average fares ranged from $108.27 at Albuquerque, New Mexico to $168.85 at Cincinnati. The range between high and low fares narrowed from 84 percent in 1984 to 56 percent in 1988.

CHANGES IN AVERAGE FARE, MEDIUM HUBS, **1984-1988**
(Hubs Arrayed in Descending Order by Percent Change)

Medium Hubs	Average Fare ($) 1984	1988	Percent Change, 1984-1988
Norfolk, VA	$ 99.99	$ 124.83	24.8%
Buffalo/Niagara Falls, NY	93.31	114.39	22.6
Syracuse, NY	110.76	134.42	21.4
Austin, TX	93.64	111.65	19.2
Jacksonville, FL	134.11	153.15	14.2
Tulsa, OK	103.46	118.18	14.2
Raleigh/Durham, NC	136.82	155.06	13.3
Albuquerque, NM	96.45	108.27	12.3
El Paso, TX	100.88	110.85	9.9
San Jose, CA	119.64	130.88	9.4
San Antonio, TX	104.65	113.85	8.8
Cincinnati, OH	160.34	168.85	5.3
Oklahoma City, OK	113.64	118.39	4.2
Sacramento, CA	129.62	134.87	4.1
New Orleans, LA	125.24	129.77	3.6
Columbus, OH	130.34	134.68	3.3
National Average	134.51	136.13	1.2
Dayton, OH	164.89	165.55	0.4
Reno, NV	115.77	115.55	- 0.2
West Palm Beach, FL	141.95	138.84	- 2.2
Ontario, CA	128.75	124.46	- 3.3
Portland, OR	159.23	153.74	- 3.4
Hartford, Cl	157.61	150.03	- 4.8
Rochester, NY	142.40	133.06	- 6.6
Nashville, TN	159.32	144.86	- 9.1
Tucson, AZ	140.05	124.25	=11.3
Cleveland, OH	149.59	130.04	-13.1
Milwaukee, WI	170.37	146.19	-14.2
Indianapolis, IN	159.75	133.29	-16.6
Ft. Myers, FL	172.10	125.45	-27.1

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Table II-14 and Chart II-K show the distribution of fare changes at the medium hubs. Sixteen hubs were between -9.9 and +9.9 percent. The modal group was the 0.0 to 9.9 percent change group, which included 9 hubs. In terms of the national average of 1.2 percent, 16 hubs were above the average and 13 were below.
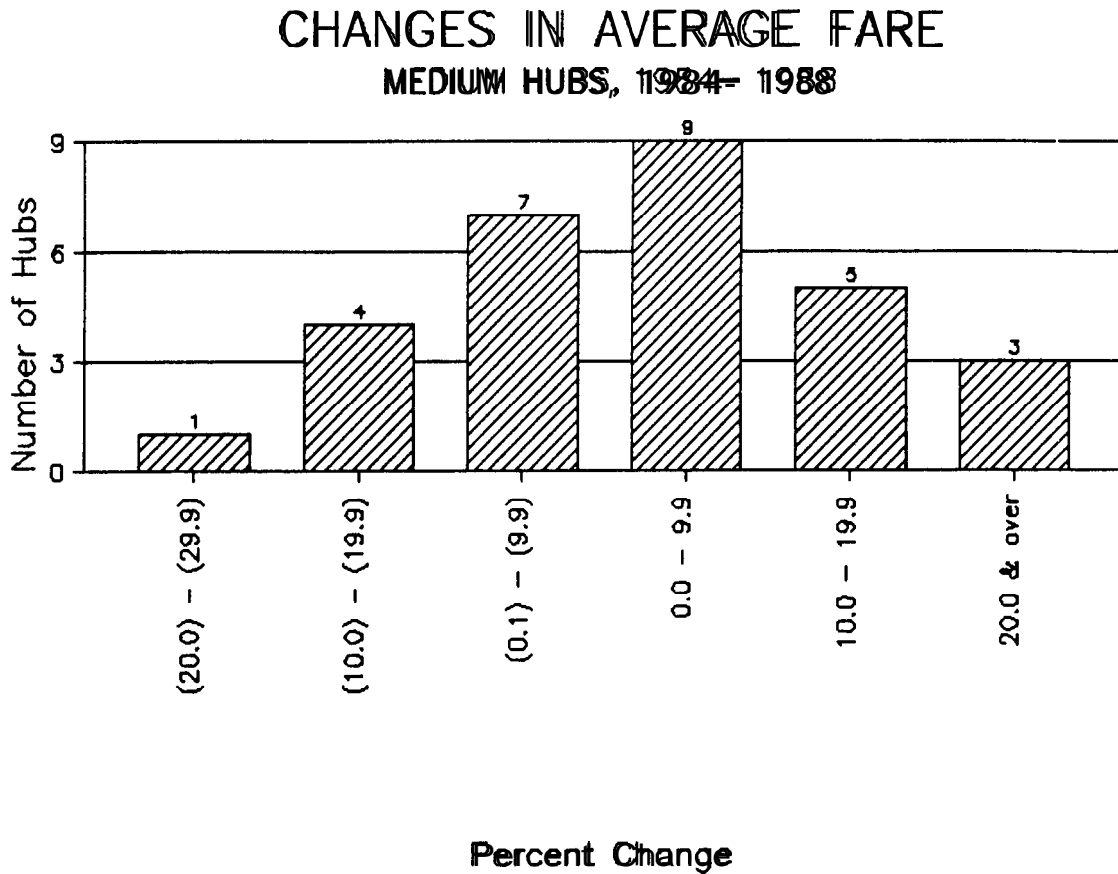
CHANGES IN AVERAGE FARE
MEDIUM HUBS, 1984- 1988

Percent Change

CHANGE IN AVERAGE FARE, MEDIUM HUBS, 1984-1988

Percent Change, 1984-1988	Number of Medium Hubs	Percent of Medium Hubs*
(20.0) - (29.9)	1	3.4
(10.0) - (19.9)	4	13.8
(0.1) - (9.9)	7	24.1
0.0 - 9.9	9	31.0
10.0 - 19.9	5	17.2
20.0 & over	3	10.3
Total	29	100.0

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE FARES - SMALL HUBS 1984-1988

Tables II-15 and II-16

Changes in average air fares at the small hubs between 1984 and 1988 ranged from 65.0 percent at Burlington, Vermont to a decrease of 23.7 percent at Birmingham, Alabama. The fare increase at Burlington averaged 13.3 percent per year, which was far in excess of the 3.3 percent average annual rate of increase in the Consumer Price Index in this period.   (Table II-15)..

Some of the higher fare increases occurred at concentrated hubs such as Burlington, Vermont, Harlingen, Midland/Odessa, Amarillo and Lubbock, Texas, and Greensboro, NC, but other concentrated hubs such as Eugene, Oregon, Roanoke, Virginia and Shreveport, Louisiana had below-average changes.   (Chart II-L).
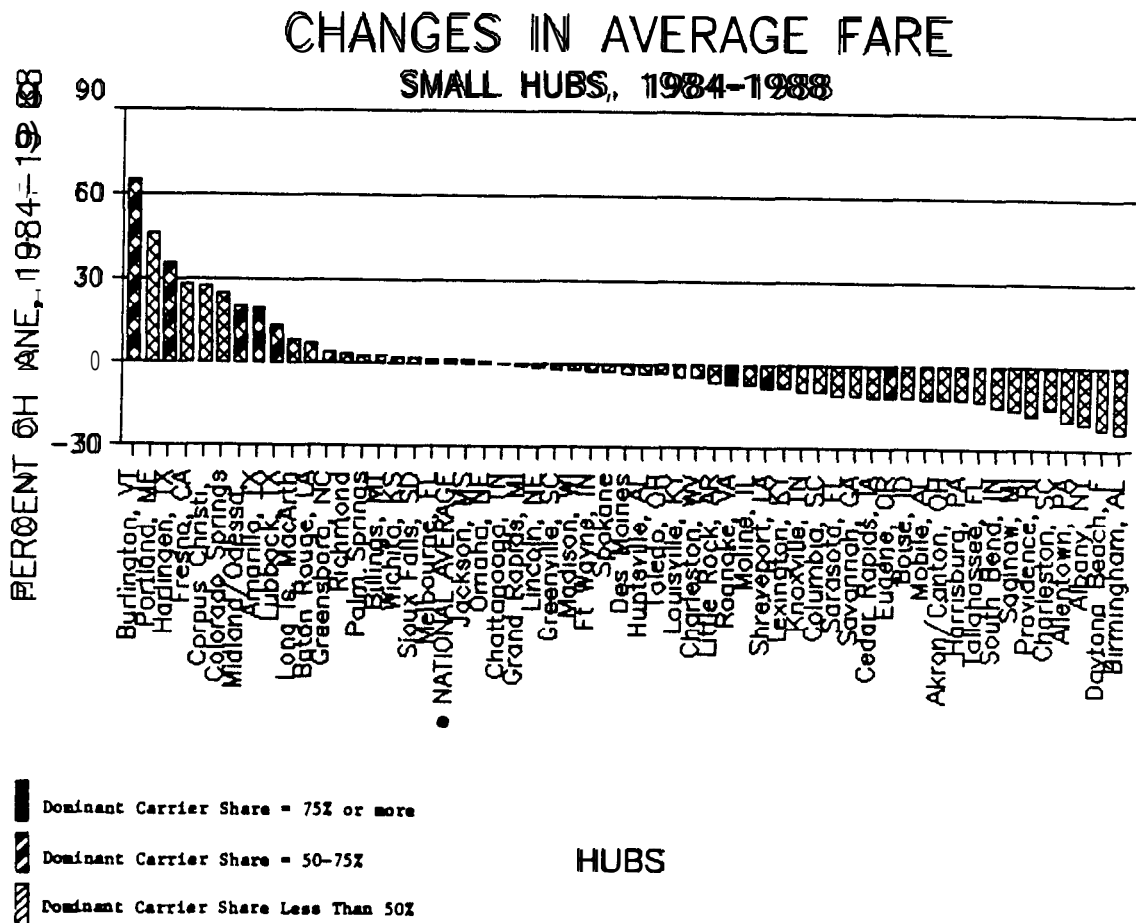
CHANGES IN AVERAGE FARE
SMALL HUBS, 1984-1988

Dominant Carrier Share = 75% or more

Dominant Carrier Share = 50-75%

Dominant Carrier Share Less Than 50%

HUBS

CHANGES IN AVERAGE FARE, SMALL HUBS, 1984-1988
(Hubs Arrayed in Descending Order by Percent Change)

Small Hubs	Average Fare ($)		Percent Change, 1984-1988
	1984	1988	
Burlington, VT	$ 78.71	$ 129.87	65.0%
Portland, ME	93.17	136.09	46.1
Harlingen, TX	76.44	103.32	35.2
Fresno, CA	118.69	152.12	28.2
Corpus Christi, TX	88.44	112.54	27.3
Colorado Springs, CO	116.61	145.70	24.9
Midland/Odessa, TX	71.88	86.17	19.9
Amarillo, TX	85.66	102.00	19.1
Lubbock, TX	71.45	80.80	13.1
Long Island MacArthur, NY	110.30	119.19	8.1
Baton Rouge, LA	151.26	162.08	7.2
Greensboro, NC	150.37	155.82	3.6
Richmond, VA	155.95	160.89	3.2
Palm Springs, CA	166.29	170.86	2.7
Billings, MT	146.32	150.06	2.6
Wichita, KS	152.71	155.66	1.9
Sioux Falls, SD	150.42	152.91	1.7
Melbourne, FL	140.65	142.70	1.5
National Average	134.51	136.13	1.2
Jackson, MS	170.71	172.41	1.0
Omaha, NE	142.73	144.00	0.9
Chattanooga, TN	179.05	179.50	0.3
Grand Rapids, MI	152.77	152.15	- 0.4
Lincoln, NE	146.66	144.86	- 1.2
Greenville, SC	164.19	161.41	- 1.7
Madison, WI	157.52	154.28	- 2.1
Ft. Wayne, IN	167.42	163.73	- 2.2
Spokane, WA	160.61	156.65	- 2.5
Des Moines, IA	150.89	146.45	- 2.9
Huntsville, AL	215.88	208.72	- 3.3
Toledo, OH	148.92	144.03	- 3.3
Louisville, KY	158.59	152.01	- 4.1
Charleston, WV	152.65	146.10	- 4.3

CHANGES IN AVERAGE FARE, SMALL HUBS, 1984-1988
(Hubs Arrayed in Descending Order by Percent Change)

| Small Hubs | Average Fare ($) | | Percent Change 1984-1988 |
	1984	1988	
Little Rock, AR	$ 137.95	$ 129.82	- 5.9%
Roanoke, VA	155.00	144.87	- 6.5
Moline, IL	168.40	156.66	- 7.0
Shreveport, LA	181.63	167.25	- 7.9
Lexington, KY	173.93	159.69	- 8.2
Knoxville, TN	176.81	160.96	- 9.0
Columbia, SC	173.97	158.07	- 9.1
Sarasota/Bradenton, FL	142.28	127.35	-10.5
Savannah, GA	159.91	143.06	-10.5
Cedar Rapids, IA	177.11	157.38	-11.1
Eugene, OR	178.08	158.25	-11.1
Boise, ID	185.81	164.79	-11.3
Mobile, AL	189.43	167.21	-11.7
Akron/Canton, OH	137.46	121.08	-11.9
Harrisburg, PA	176.42	155.45	-11.9
Tallahassee, FL	153.43	134.17	-12.6
South Bend, IN	170.79	146.84	-14.0
Saginaw/Bay City, MI	194.64	164.10	-15.7
Providence, RI	165.53	137.09	-17.2
Charleston, SC	169.29	138.73	-18.1
Allentown, PA	199.16	161.01	-19.2
Albany, NY	179.11	142.95	-20.2
Daytona Beach, FL	163.33	126.82	-22.4
Birmingham, AL	183.18	139.70	-23.7

82

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Average fares at the **56 small** hubs in **1984** ranged from $71.45 at Lubbock, Texas to $215.88 at Huntsville, Alabama. **In 1988,** average fares ranged from $80.80 at Lubbock, Texas to $208.72 at Huntsville. The range between high and low fares narrowed from 202 percent in **1984** to **158** percent in **1988.**

Table **II-16** and Chart II-M show the distribution of fare changes at the **small** hubs. Thirty of the hubs (**54** percent) were included between **-9.9** and **+9.9** percent. In terms of the national average of **1.2** percent, **18** small hubs were above the average and **38** were below.

CHANGES IN AVERAGE FARE
SMALL HUBS, 1984- 1988
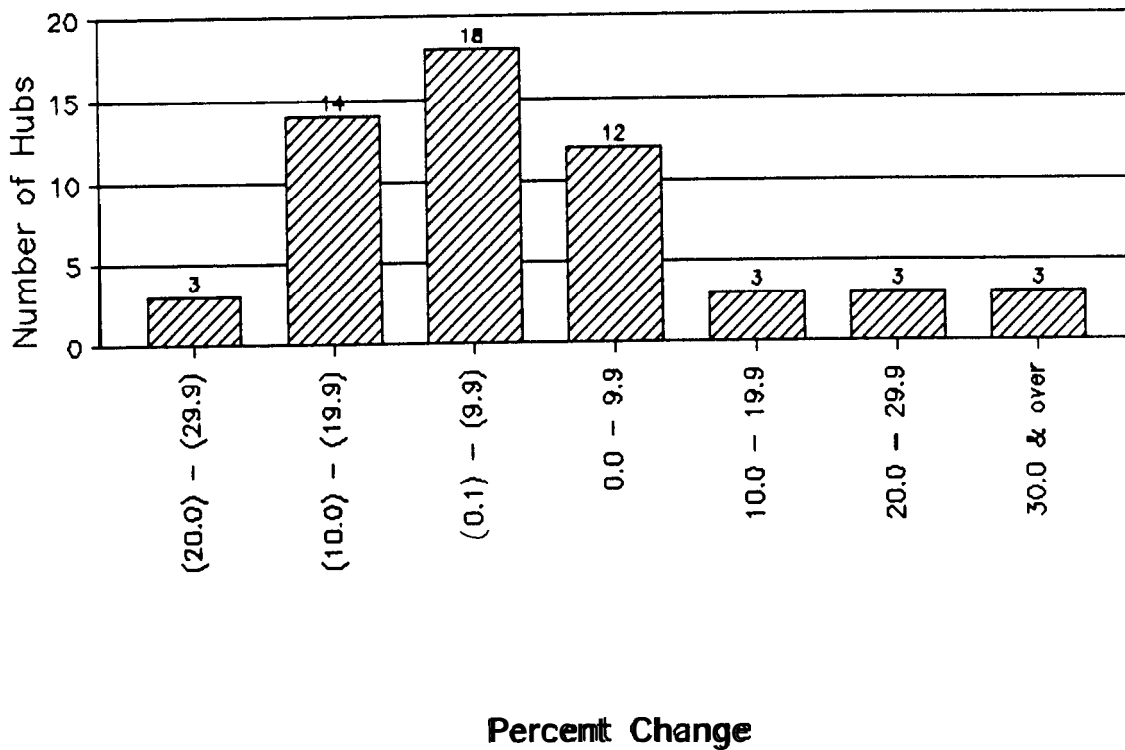
Percent Change

CHANGE IN AVERAGE FARE, SMALL HUBS, 1984-1988

Percent Change, 1984-1988	Number of Small Hubs	Percent of Small Hubs*
(20.0) - (29.9)	3	5.4
(10.0) - (19.9)	14	25.0
(0.1) - (9.9)	18	32.1
0.0 - 9.9	12	21.4
10.0 - 19.9	3	5.4
20.0 - 29.9	3	5.4
30.0 & over	3	5.4
Total	56	100.0

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE FARES, NONHUBS, 1984-1988

Tables II-17 and II-18

     Changes in average air fares at the nonhubs between 1984 and 1988 ranged from 88.4 percent at Cedar City, Utah to a decrease of 74.2 percent at New Bedford, Massachusetts. As described in the section on the 1979-1988 changes, these small points are more susceptible to large shifts in the market mix and many are represented by relatively small numbers of sample tickets so changes can be more volatile than at the hubs.

     The 362 nonhub cities are listed in Appendix II-1. Table II-17 lists the 16 nonhubs with the highest increases (40 percent or more) between 1984 and 1988. As with the 1979-1988 data, several have relatively small numbers of sample tickets.

     Average fares at the 362 nonhubs in 1984 ranged from $80.84 at Atlantic City, N.J. to $268.43 at Manitowoc, Wisconsin. In 1988, average fares ranged from $45.75 at New Bedford, Massachusetts to $323.95 at Camden, Arkansas. The range between high and low fares widened from 232 percent in 1984 to 608 percent in 1988.

     Table II-18 and Chart II-N show the distribution of fare changes at the nonhubs. The modal groups was the -0.1 to -9.9 percent group, which included 82 of the 362 nonhubs. In terms of the national average of 1.2 percent, 223 nonhubs were below the average and 139 were above.

CHANGES IN AVERAGE FARE
NONHUBS, 1984-1988
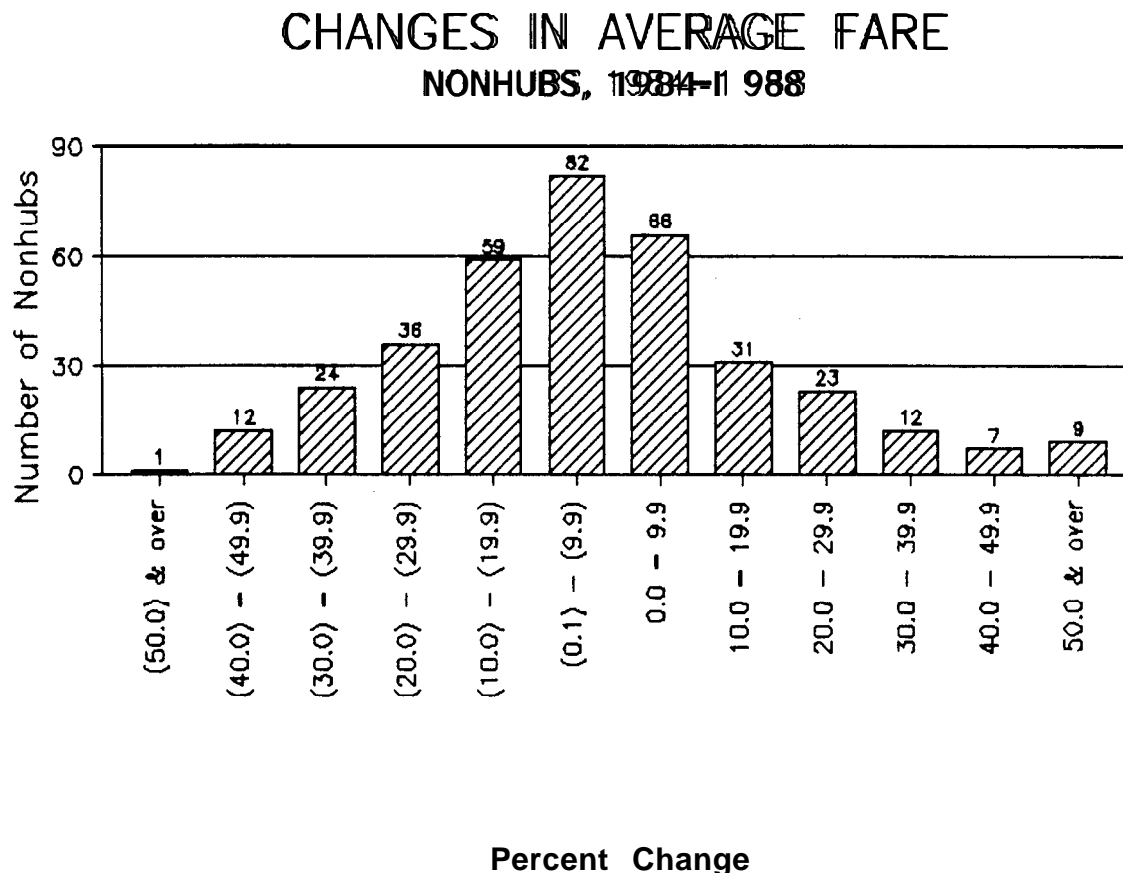
Percent Change

NONHUBS WITH INCREASES IN AVERAGE FARES
OF 40 PERCENT OR MORE, 1984-1988
(Arrayed in Descending. Order by Percent Change)

City	Sample Passengers		Average Fare($)		Percent Change
	1984	1988	1984	1988	1984-1988
Cedar City, UT	535	305	$116.26	$218.99	88.4%
Borrego Springs, CA	45	24	116.76	213.42	82.8
St. George, UT	823	427	111.08	193.82	74.5
Los Alamos, NM	44	30	119.75	198.07	65.4
McAlester, OK	22	36	144.32	237.44	64.5
Laramie, WY	1,899	459	120.37	196.22	63.0
Ocean City, MD	91	49	117.63	189.47	61.1
Garden City, KS	624	111	198.83	304.60	53.2
Rock Springs, WY	3,200	1,219	152.70	229.35	50.2
Atlantic City, NJ	16,692	9,772	80.84	120.60	49.2
East Hampton, NY	2	33	159.00	231.67	45.7
Alliance, NE	18	41	197.72	284.41	43.8
Scottsbluff, NE	3,481	1,647	126.45	181.71	43.7
Ely, NV	147	101	173.47	246.96	42.4
Carbondale, IL	316	51	133.27	189.41	42.1
Las Cruces, NM	12	65	168.75	238.25	41.2

Source: Origin-Destination Survey of Airline Passenger Traffic -
Domestic.

CHANGE IN AVERAGE FARE, NONHUBS, 1984-1988

Percent Change, 1984-1988			Number of Nonhubs	Percent of Nonhubs
(50.0)	&	over	1	0.3
(40.0)	-	(49.9)	12	3.3
(30.0)	-	(39.9)	24	6.6
(20.0)	-	(29.9)	36	9.9
(10.0)	-	(19.9)	59	16.3
(0.1)	-	(9.9)	82	22.7
0.0	-	9.9	66	18.2
10.0	-	19.9	31	8.6
20.0	-	29.9	23	6.4
30.0	-	39.9	12	3.3
40.0	-	49.9	7	1.9
50.0	&	over	9	2.5
Total			362	100.0

NUMBER AND PERCENT OF HUBS AND **NONHUBS** HAVING CHANGES IN
AVERAGE **FARES** BELOW AND **ABOVE NATIONAL** AVERAGE, 1984-1988

Table **II-19**

    In the **1984-1988** period, **14** of the **27** large hubs had fare
changes below the national average and **13** were above. For medium
hubs, **13** were below average and **16** were above. For **small** hubs, **38**
(**68** percent) were below the average and **18** (**32** percent) were above.
For **nonhubs**, **223** (**62** percent) were below the average and **139** (**38**
percent) were above. Of the **474** points, **288**, or **61** percent, were
below the national average and **186**, or **39** percent, had a change
above the average.

NUMBER AND PERCENT OF HUBS AND NONHUBS HAVING CHANGES
IN AVERAGE FARES BELOW AND ABOVE NATIONAL AVERAGE
1984-1988

Hub Class	Number of Hubs		Percent of Hubs	
	Below Average	Above Average	Below Average	Above Average
Large	14	13	52%	48%
Medium	13	16	45	55
Small	38	18	68	32
Nonhub	223	139	62	38
Total	288	186	61	39

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

ALTERNATE MEASURES OF PRICE CHANGE

Tables II-20 to II-23

Changes in average fares from one period to another reflect not only the actual changes in fares in each city-pair but also the changing market mix, as some markets gain in passenger volume and some lose, either absolutely or relatively. Price indexes can be prepared to reflect only the price change component by using fixed traffic (passenger) weights. Two examples are the base-year weighted fares, where the numbers of passengers are from the base year (the Laspeyres formula), and the current-year weighted fares, where the numbers of passengers from the most recent year are the weights (the Paasche formula). The formulas are:

Laspeyres Price Index: $\dfrac{\Sigma \, Q_{79} \, P_{88}}{\Sigma \, Q_{79} \, p_{79}} \times 100$

Where Q_{79} = passengers in calendar year 1979
P_{88} = passenger fare in calendar year 1988
p_{79} = passenger fare in calendar year 1979

Paasche Price Index: $\dfrac{\Sigma \, Q_{88} \, P_{88}}{\Sigma \, Q_{88} \, P_{79}} \times 100$

Where Q_{88} = passengers in calendar year 1988
P_{88} = passenger fare in calendar year 1988
p_{79} = passenger fare in calendar year 1979

Indexes using these formulations have been prepared as alternative measures of price change. The results are shown below for both the 1979-1988 and 1984-1988 periods. In the 1979-1988 comparison note that the difference in the two weighted indexes is the smallest for the large hubs, the most stable markets. The differences are progressively greater as hub size declines. The difference is about 18 percentage points for small hubs and non-hubs, the markets which reflect the most sweeping changes since deregulation. All of the 1988-weighted indexes show lower increases in fares than the 1979-weighted indexes. The 1988-weighted indexes reflect the structure and market mix of the industry in 1988 and are, arguably, the most useful measure of price changes. The 1979-weighted indexes reflect the structure and market mix of 1979, when the industry was much different than today.

1979-1988

| | Percent Change in Fare, 1979 to 1988 | | |
Hub Type	Change in Nominal Fares	1979 Traffic - Weighted Fares	1988 Traffic - Weighted Fares
Large	38.3%	42.3%	34.0%
Medium	38.9	43.1	30.1
Small	59.4	63.9	45.5
Nonhub	61.4	67.3	49.1
Total	41.5	46.3	35.1

In the **1984-1988** comparison the two indexes show declines of **1.0** and **7.3** percent using the **1984** and **1988** weights, respectively. In all cases the hub data show greater decreases for the **1988**-weighted indexes vs. the **1984-weighted** increases.

1984-1988

	Percent Change in Fare, **1984** to **1988**		
Hub Type	Change in Nominal Fares	**1984** Traffic – Weighted Fares	**1988** Traffic – Weighted Fares
Large	1.4%	– 0.4%	– 6.3%
Medium	2.6	– 2.0	– 9.2
Small	– 0.4	– 2.8	–10.0
Nonhub	– 6.3	– 1.9	– 7.0
Total	1.2	– 1.0	– 7.3

In interpreting the nominal price changes it is important to be aware of the fact that changes in average mileages, as they reflect the changing mix of passengers, have an impact on the fare changes measured. The **Laspeyres** and **Paasche** indexes hold the market mix constant and therefore are purer measures of price change. Tables **II-20, II-21** and **II-22** show the average mileages for the large, medium and small hubs, respectively, and the percentage changes from **1979** to **1988** and **1984** to **1988.**

Table **II-23** shows the change in average mileage for the three hub classes for the **1979-1988** and **1984-1988** periods and the ranges within each hub class for each period. For example, at the large hubs the average change in mileage per passenger between **1979** and **1988** was **3.2** percent. The range of the individual hubs varied from a **13.6** percent decrease at Phoenix to a **21.7** increase at Salt Lake City. (Table **II-20).**

AVERAGE MILEAGE PER PASSENGER, LARGE HUBS,
1979, 1984 and 1988

Hub	Average Mileage			Percent Change	
	1979	1984	1988	1979-1988	1984-1988
Atlanta, GA	643	688	741	15.2%	7.7%
Baltimore, MD	852	812	935	9.7	15.1
Boston, MA	863	816	947	9.7	16.1
Charlotte, NC	595	614	640	7.6	4.2
Chicago, IL	788	808	829	5.2	2.6
Dallas/Ft. Worth, TX	776	663	714	- 8.0	7.7
Denver, CO	893	913	980	9.7	7.3
Detroit, MI	752	825	805	7.0	= 2.4
Houston, TX	817	737	755	- 7.6	2.4
Kansas City, MO	740	762	812	9.7	6.6
Las Vegas, NV	984	908	961	- 2.3	5.8
Los Angeles, CA	1,268	1,142	1,195	- 5.8	4.6
Memphis, TN	635	676	701	10.4	3.7
Miami/Ft. Lauderdale, FL	1,067	1,070	1,082	1.4	1.1
Minneapolis/St. Paul	808	833	888	9.9	6.6
New York/Newark, NY	959	870	1,000	4.3	14.9
Orlando, FL	884	925	982	11.1	6.2
Philadelphia, PA	880	933	928	5.5	- 0.5
Phoenix, AZ	1,044	895	902	- 13.6	- 0.8
Pittsburgh, PA	668	620	713	6.7	15.0
Salt Lake City, UT	834	926	1,015	21.7	9.6
San Diego, CA	1,135	1,004	1,057	- 6.9	5.3
San Francisco/Oakland, CA	1,291	1,136	1,249	- 3.3	9.9
Seattle/Tacoma, WA	1,120	1,246	1,314	17.3	5.5
St. Louis, MO	709	719	744	4.9	3.5
Tampa, FL	895	911	942	5.3	3.4
Washington, DC	742	790	853	15.0	8.0
All Large Hubs	919	886	948	3.2	7.0

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

AVERAGE MILEAGE PER PASSENGER, MEDIUM HUBS,
1979, 1984 and **1988**

Hub	Average Mileage			Percent Change	
	1979	1984	1988	1979-1988	1984-1988
Albuquerque, NM	855	725	796	- 6.9%	9.8%
Austin, TX	730	573	700	- 4.1	22.2
Buffalo, NY	671	506	695	3.6	37.4
Cincinnati, OH	641	681	751	17.2	10.3
Cleveland, OH	725	764	794	9.5	3.9
Columbus, OH	675	667	750	11.1	12.4
Dayton, OH	735	769	768	4.5	- 0.1
El Paso, TX	866	720	756	- 12.7	5.0
Ft. Myers, FL	1,003	1,066	1,073	7.0	0.7
Hartford, CT	935	894	1,030	10.2	15.2
Indianapolis, IN	669	787	796	13.9	1.1
Jacksonville, FL	735	791	809	10.1	2.3
Milwaukee, WI	772	849	896	16.1	5.5
Nashville, TN	626	660	681	8.8	3.2
New Orleans, LA	813	789	858	5.5	8.7
Norfolk, VA	629	581	743	18.1	27.9
Oklahoma City, OK	767	678	729	- 5.0	7.5
Ontario, CA	983	908	976	- 0.7	7.5
Portland, OR	1,010	1,059	1,177	16.5	11.1
Raleigh/Durham, NC	641	631	677	5.6	7.3
Reno, NV	696	792	929	33.5	17.3
Rochester, NY	675	668	721	6.8	7.9
Sacramento, CA	858	836	972	13.3	16.3
San Antonio, TX	875	703	772	- 11.8	9.8
San Jose, CA	897	758	915	2.0	20.7
Syracuse, NY	709	547	807	13.8	47.5
Tucson, AZ	1,055	949	1,036	- 1.8	9.2
Tulsa, OK	728	642	685	- 5.9	6.7
W. Palm Beach, FL	1,012	1,039	1,062	4.9	2.2
All Medium Hubs	787	759	848	7.8	11.7

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

AVERAGE MILEAGE PER PASSENGER, SMALL HUBS,
1979, 1984 and 1988

Hub	Average Mileage			Percent Change	
	1979	1984	1988	1979-1988	1984-1988
Akron/Canton, OH	712	641	784	10.1%	22.3%
Albany, NY	737	859	855	16.0	- 0.5
Allentown, PA	788	903	963	22.2	6.6
Amarillo, TX	635	537	563	- 11.3	4.8
Baton Rouge, LA	671	721	826	23.1	14.6
Billings, MT	732	703	872	19.1	24.0
Birmingham, AL	634	677	700	10.4	3.4
Boise, ID	731	905	955	30.6	5.5
Burlington, VT	659	482	901	36.7	86.9
Cedar Rapids, IA	766	900	896	17.0	- 0.4
Charleston, SC	701	696	695	- 0.9	- 0.1
Charleston, WV	546	591	617	13.0	4.4
Chattanooga, TN	623	657	696	11.7	5.9
Colorado Springs, CO	899	855	976	8.6	14.2
Columbia, SC	657	694	720	9.6	3.7
Corpus Christi, TX	694	538	641	- 7.6	19.1
Daytona Beach, FL	830	880	894	7.7	1.6
Des Moines, IA	728	838	863	18.5	3.0
Eugene, OR	839	1,116	1,118	33.3	0.2
Fresno, CA	687	654	936	36.2	43.1
Ft. Wayne, IN	712	730	774	8.7	6.0
Grand Rapids, MI	712	810	822	15.4	1.5
Greensboro, MC	622	635	663	6.6	4.4
Greenville, SC	620	638	676	9.0	6.0
Harlingen, TX	661	531	653	- 1.2	23.0
Harrisburg, PA	666	854	813	22.1	- 4.8
Huntsville, AL	713	801	832	16.7	3.9
Palm Springs, CA	1,026	1,064	1,302	26.9	22.4
Long Island MacArthur, NY	437	853	836	91.3	- 2.0
Jackson, MS	669	742	786	17.5	5.9
Knoxville, TN	620	675	704	13.5	4.3
Lexington, KY	606	671	686	13.2	2.2
Lincoln, NE	773	818	922	19.3	12.7
Little Rock, AR	676	644	627	- 7.2	- 2.6
Louisville, KY	623	673	715	14.8	6.2
Lubbock, TX	588	467	512	- 12.9	9.6
Madison, WI	682	875	847	24.2	- 3.2
Melbourne, FL	928	993	967	4.2	- 2.6
Midland/Odessa, TX	582	477	531	- 8.8	11.3
Mobile, AL	663	755	854	28.8	13.1

AVERAGE MILEAGE PER PASSENGER, SMALL HUBS,
1979, 1984 and 1988

Hub	Average Mileage			Percent Change	
	1979	1984	1988	1979-1988	1984-1988
Moline, IL	728	821	855	17.4%	4.1%
Omaha, NE	764	811	874	14.4	7.8
Portland, OR	731	559	895	22.4	60.1
Providence, RI	754	949	960	27.3	1.2
Richmond, VA	639	647	697	9.1	7.7
Roanoke, VA	514	614	648	26.1	5.5
Saginaw/Bay City, MI	775	802	876	13.0	9.2
Sarasota/Bradenton, FL	944	1,028	1,018	7.8	- 1.0
Savannah, GA	679	707	746	9.9	5.5
Shreveport, LA	636	716	826	29.9	15.4
Sioux Falls, SD	678	805	872	28.6	8.3
South Bend, IN	779	829	798	2.4	- 3.7
Spokane, WA	747	856	999	33.7	16.7
Tallahassee, FL	544	563	576	5.9	2.3
Toledo, OH	725	860	798	10.1	- 7.2
Wichita, KS	763	778	900	18.0	15.7
All Small Hubs	688	767	793	15.3	3.4

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

CHANGES IN AVERAGE MILEAGE PER PASSENGER, ALL HUBS
1979, 1984 and 1988

1979-1988

Hub Class	Percent Change	Range (Percent)	
		-Low	High
Large 1/	3.2%	=13.6%	21.7%
Medium 2/	7.8	=12.7	33.5
Small 3/	15.3	-12.9	91.3

1984-1988

Large 1/	7.0	- 2.4	16.1
Medium 2/	11.7	- 0.1	47.5
Small 3/	3.4	- 7.2	86.9

1/ 27 large hubs.

2/ 29 medium hubs.

3/ 56 small hubs.

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS VS. ALL OTHER
MARKETS, ALL HUBS, 1979-1988

Tables II-24 to II-27

Fare changes in the top city-pair markets of each hub (based on
1988 traffic data) were compared with the fare changes of all other
city-pair markets of that hub. The results show that in the 1979-
1988 period the smaller markets of large hubs had greater increases
than the top 5 markets. The percentage point spread was 7.6 points.
For medium and small hubs the increases were greater in the top 5
markets than in the smaller markets. The percentage point spread
(unweighted) was 4.7 points for medium hubs and 18.5 points for small
hubs. See Table II-24.

The differences between fare changes in the top 5 markets vs. all
other markets varied widely. At large hubs, for example, the percent-
age point spread at Orlando was only 0.4 points, while at Salt Lake
City it was 50.7 points. The average fare in the top 5 markets of
Orlando increased 39.2 percent while in its other markets it increased
38.8 percent -- a difference of 0.4 percentage points. At Salt Lake
City, however, the average fare in the top 5 markets increased 109.2
percent, while the average in all other markets increased 58.5 percent -
- a difference of 50.7 percentage points.

Shifts in the market mixes are important when comparing these fare
changes. Since the top 5 markets are held constant there is probably
somewhat less change in the weighting of those markets than in the other
smaller markets.

Summarized below are the large, medium and small hubs which had
the greatest spreads between fare changes in the top 5 markets and all
other markets-. (See Tables II-25, II-26 and II-27).

Large Hubs With a Decrease or Lower Increase in the Top 5 Markets

| | Percent Change, 1979-88 | | Percentage Point Spread, |
Hub	Top 5 Mkts.	All Other	Top 5 - Other
Kansas City, MO	-14.7%	31.1%	-45.8
St. Louis, MO	-36.1	77.9	-41.8
Dallas, TX	21.8	63.1	-41.3
Denver, CO	- 9.5	26.1	-35.6
Detroit, MI	23.6	58.7	-35.1

Large Hubs With a Greater Increase in the Top 5 Markets

| | Percent Change, 1979-88 | | Percentage Point Spread, |
Hub	Top 5 Mkts.	All Other	Top 5 - Other
Salt Lake City, UT	109.2%	58.5%	50.7
Washington, DC	61.6	44.5	17.1
Seattle/Tacoma, WA	41.0	25.0	16.0
Charlotte, NC	103.5	88.4	15.1
Tampa, FL	55.8	41.7	14.1

Medium Hubs With a Decrease in the Top 5 Markets

Hub	Percent Change, 1979-88		Percentage Point Spread,
	Top 5 Mkts.	All other	Top 5 - Other
Oklahoma City, OK	-17.4%	23.4%	-40.8
Tulsa, OK	- 6.8	24.3	-31.1
Austin, TX	- 9.8	18.0	-27.8
San Antonio, TX	-16.6	6.6	-23.2
Tucson, AZ	-11.3	9.5	-20.8

Medium Hubs a With Greater Increase in the Top 5 Markets

Hub	Percent Change, 1979-88		Percentage Point Spread,
	Top 5 Mkts.	All Other	Top 5 - Other
Sacramento, CA	125.0%	41.5%	83.5
Reno, NV	108.8	27.3	81.5
Raleigh/Durham, NC	119.3	66.7	52.6
Syracuse, NY	87.9	43.1	44.8
Dayton, OH	109.8	76.0	33.8

Small Hubs With a Lower Increase or a Decrease in Top 5 Markets

Hub	Percent Change, 1979-88		Percentage Point Spread,
	Top 5 Mkts.	All Other	Top - Other
Little Rock, AR	14.8%	73.6%	-58.7
South Bend, IN	34.2	77.7	-43.5
Birmingham, AL	39.4	76.6	-37.2
Palm Springs, CA	36.9	71.8	-34.9
Mobile, AL	64.6	88.5	-23.9

Small Hubs With a Greater Increase in the Top 5 Markets

Hub	Percent Change, 1979-88		Percentage Point Spread,
	Top 5 Mkts.	All Other	Top 5 - Other
Fresno, CA	241.8%	55.1%	186.7
Harlingen, TX	143.3	11.1	132.2
Spokane, WA	125.6	41.2	84.4
Boise, ID	125.9	50.0	75.9
Toledo, OH	111.3	57.1	54.2

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, ALL HUBS, 1979-1988

Hub Class	Percent Change in Average Fare		Percentage Point Spread
	Top 5 Mkts.	All Other Mkts.	Top 5 - Other
Large	40.3	47.9	- 7.6
Medium	45.5	40.8	4.7
Small	77.9	59.4	18.5

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, LARGE HUBS, 1979-1988

Hub	Percent Change, 1979-1988		Percentage Point Spread, Top 5 - Other
	Top 5 Markets	All Other Markets	
Atlanta, GA	102.3	99.7	2.6
Baltimore, MD	66.1	63.2	2.9
Boston, MA	47.4	46.3	1.1
Charlotte, NC	103.5	88.4	15.1
Chicago, IL	21.9	44.7	-22.8
Dallas/Ft. Worth, TX	21.8	63.1	-41.3
Denver, CO	- 9.5	26.1	-35.6
Detroit, MI	23.6	58.7	-35.1
Houston, TX	11.5	30.2	-18.7
Kansas City, MO	- 14.7	31.1	-45.8
Las Vegas, NV	13.4	2.6	10.8
Los Angeles, CA	13.0	25.8	-12.8
Memphis, TN	110.9	109.7	1.2
Miami/Ft. Lauderdale, FL	32.9	31.9	1.0
Minneapolis/St. Paul, MN	55.4	69.8	-14.4
New York/Newark, NY	45.2	46.7	- 1.5
Orlando, FL	39.2	38.8	0.4
Philadelphia, PA	45.2	62.7	-17.5
Phoenix, AZ	- 36.5	- 2.1	-34.4
Pittsburgh, PA	74.7	63.0	11.7
Salt Lake City, UT	109.2	58.5	50.7
San Diego, CA	- 8.8	21.9	-30.7
San Francisco/Oakland, CA	25.4	22.6	2.8
Seattle/Tacoma, WA	41.0	25.0	16.0
St. Louis, MO	36.1	77.9	-41.8
Tampa, FL	55.8	41.7	14.1
Washington, DC	61.6	44.5	17.1
Average (Unweighted)	40.3	47.9	- 7.6

Source: Origin-Destination Survey of Airline Passenger Traffic -
Domestic.

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, MEDIUM HUBS, 1979-1988

| Hub | Percent Change, 1979-1988 | | Percentage Point Spread, |
	Top 5 Markets	All Other Markets	5 Top - Other
Albuquerque, NM	- 16.0	- 6.3	- 9.7
Austin, TX	- 9.8	18.0	-27.8
Buffalo, NY	50.8	45.4	5.4
Cincinnati	105.4	102.9	2.5
Cleveland, OH	50.3	70.3	-20.0
Columbus, OH	55.5	63.3	- 7.8
Dayton, OH	109.8	76.0	33.8
El Paso, TX	- 22.7	-13.1	- 9.6
Ft. Myers, FL	12.0	22.6	-10.6
Hartford, CT	45.3	53.2	- 7.9
Indianapolis, IN	40.2	58.4	-18.2
Jacksonville, FL	77.2	67.9	9.3
Milwaukee, WI	78.6	63.6	15.0
Nashville, TN	57.3	74.4	-17.1
New Orleans, LA	23.4	36.1	-12.7
Norfolk, VA	54.4	58.4	- 4.0
Oklahoma City, OK	- 17.4	23.4	-40.8
Ontario, CA	15.5	1.1	14.4
Portland, OR	45.8	21.6	24.2
Raleigh/Durham, NC	119.3	66.7	52.6
Reno, NV	108.8	27.3	81.5
Rochester, NY	87.1	58.6	28.5
Sacramento, CA	125.0	41.5	83.5
San Antonio, TX	- 16.6	6.6	-23.2
San Jose, CA	37.3	27.4	9.9
Syracuse, NY	87.9	43.1	44.8
Tucson, AZ	- 11.3	9.5	-20.8
Tulsa, OK	- 6.8	24.3	-31.1
W. Palm Beach, FL	32.4	42.2	- 9.8
Average (Unweighted)	45.5	40.8	4.7

Source: Origin-Destination Survey of Airline Passenger Traffic -
Domestic.

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, SMALL HUBS, 1979-1988

Hub	Percent Change, 1979-1988		Percentage Point Spread,
	Top 5 Markets	All Other Markets	Top 5 - Other
Akron/Canton, OH	51.3	48.5	2.8
Albany, NY	91.6	45.1	46.5
Allentown, PA	106.2	69.5	36.7
Amarillo, TX	41.9	40.8	1.1
Baton Rouge, LA	88.3	66.1	22.2
Billings, MT	71.9	42.2	29.7
Birmingham, AL	39.4	76.6	- 37.2
Boise, ID	125.9	50.0	75.9
Burlington, VT	58.4	37.1	21.3
Cedar Rapids, IA	73.1	80.5	- 7.4
Charleston, SC	65.0	56.4	8.6
Charleston, W	99.9	73.0	26.9
Chattanooga, TN	109.0	104.5	4.5
Colorado Springs, CO	- 22.5	- 3.2	- 19.3
Columbia, SC	86.3	82.4	3.9
Corpus Christi, TX	50.4	21.1	29.3
Daytona Beach, FL	45.5	45.2	0.3
Des Moines, IA	53.3	70.4	- 17.1
Eugene, OR	80.9	35.2	45.7
Fresno, CA	241.8	55.1	186.7
Ft. Wayne, IN	112.4	82.5	29.9
Grand Rapids, MI	108.8	75.8	33.0
Greensboro, NC	114.5	71.6	42.9
Greenville, SC	84.2	78.4	5.8
Harlingen, TX	143.3	11.1	132.2
Harrisburg, PA	100.8	57.8	43.0
Huntsville, AL	97.3	120.9	- 23.6
Palm Springs, CA	36.9	71.8	- 34.9
Long Island MacArthur, NY	101.7	61.2	40.5
Jackson, MS	104.7	90.3	14.4
Knoxville, TN	115.2	82.0	33.2
Lexington, KY	116.5	77.6	38.9
Lincoln, NE	54.8	51.7	3.1
Little Rock, AR	14.9	73.6	- 58.7
Louisville, KY	99.2	79.7	19.5
Lubbock, TX	11.2	- 9.6	20.8
Madison, WI	80.3	71.5	8.8
Melbourne, FL	43.8	36.4	7.4
Midland/Odessa, TX	- 11.3	-15.8	4.5
Mobile, AL	64.6	88.5	- 23.9

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, SMALL HUBS 1979-1988

| | Percent Change, 1979-1988 | | Percentage Point Spread, |
Hub	Top 5 Markets	All Other Markets	Top 5 - Other
Moline, IL	81.5	84.1	- 2.6
Omaha, NE	71.9	53.2	18.7
Portland, ME	68.9	44.2	24.7
Providence, RI	55.4	47.7	7.7
Richmond, VA	114.9	73.8	41.1
Roanoke, VA	80.0	73.4	6.6
Saginaw/Bay City, MI	123.8	77.2	46.6
Sarasota/Bradenton, FL	21.3	31.8	- 10.5
Savannah, GA	75.8	54.9	20.9
Shreveport, LA	79.6	100.0	- 20.4
Sioux Falls, SD	67.3	58.2	9.1
South Bend, IN	34.2	77.7	- 43.5
Spokane, WA	125.6	41.2	84.4
Tallahassee, FL	71.0	67.6	3.4
Toledo, OH	111.3	57.1	54.2
Wichita, KS	26.7	29.7	- 3.0
Average (Unweighted)	77.9	59.4	18.5

Source: Origin-Destination Survey of Airline Passenger Traffic -
Domestic.

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, SMALL HUBS 1979-1988

Hub	Percent Change, 1979-1988		Percentage Point Spread, Top 5 - Other
	Top 5 Markets	All Other Markets	
Moline, IL	81.5	84.1	- 2.6
Omaha, NE	71.9	53.2	18.7
Portland, ME	68.9	44.2	24.7
Providence, RI	55.4	47.7	7.7
Richmond, VA	114.9	73.8	41.1
Roanoke, VA	80.0	73.4	6.6
Saginaw/Bay City, MI	123.8	77.2	46.6
Sarasota/Bradenton, FL	21.3	31.8	- 10.5
Savannah, GA	75.8	54.9	20.9
Shreveport, LA	79.6	100.0	- 20.4
Sioux Falls, SD	67.3	58.2	9.1
South Bend, IN	34.2	77.7	- 43.5
Spokane, WA	125.6	41.2	84.4
Tallahassee, FL	71.0	67.6	3.4
Toledo, OH	111.3	57.1	54.2
Wichita, KS	26.7	29.7	- 3.0
Average (Unweighted)	77.9	59.4	18.5

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Medium Hubs With an Increase in the Top 5 Markets

Hub	Percent Change, 1984-88		Percentage Point Spread, Top 5 - Other
	Top 5 Mkts.	All Other	
Syracuse, NY	62.7%	-20.2%	82.9
Buffalo, NY	58.5	-21.1	79.6
Norfolk, VA	63.2	- 3.2	66.4
Raleigh/Durham, NC	46.1	- 4.6	50.7
Jacksonville, FL	39.3	=11.3	50.6

Small Hubs With a Decrease in the Top 5 Markets

Hub	Percent Change, 1984-88		Percentage Point Spread, Top 5 - Other
	Top 5 Mkts.	All Other	
Cedar City, IA	-26.7%	- 2.4%	-24.3
Moline, IL	-22.2	0.7	=22.9
Palm Springs, CA	- 7.3	9.0	-16.3
Akron/Canton, OH	-23.9	=12.8	-11.1
Madison, WI	- 9.6	1.2	-10.8

Small Hubs With an Increase in the Top 5 Markets

Hub	Percent Change, 1984-88		Percentage Point Spread, Top 5 - Other
	Top 5 Mkts.	All Other	
Portland, ME	107.8%	=21.7%	129.5
Burlington, VT	106.8	=22.5	129.3
Melbourne, FL	26.4	-32.9	59.3
Fresno, CA	53.2	2.2	51.0
Baton Rouge, LA	31.6	- 3.6	35.2

Medium Hubs With an Increase in the Top 5 Markets

| Hub | Percent Change, 1984-88 | | Percentage Point Spread, |
	Top 5 Mkts.	All Other	Top 5 - Other
Syracuse, NY	62.7%	-20.2%	82.9
Buffalo, NY	58.5	-21.1	79.6
Norfolk, VA	63.2	- 3.2	66.4
Raleigh/Durham, NC	46.1	- 4.6	50.7
Jacksonville, FL	39.3	-11.3	50.6

Small Hubs With a Decrease in the Top 5 Markets

| Hub a | Percent Change, 1984-88 | | Percentage Point Spread, |
	Top 5 Mkts.	All Other	Top 5 - Other
Cedar City, IA	-26.7%	- 2.4%	-24.3
Moline, IL	-22.2	0.7	-22.9
Palm Springs, CA	- 7.3	9.0	-16.3
Akron/Canton, OH	-23.9	-12.8	-11.1
Madison, WI	- 9.6	1.2	-10.8

Small Hubs With an Increase in the Top 5 Markets

| Hub | Percent Change, 1984-88 | | Percentage Point Spread, |
	Top 5 Mkts.	All Other	Top 5 - Other
Portland, ME	107.8%	-21.7%	129.5
Burlington, VT	106.8	-22.5	129.3
Melbourne, FL	26.4	-32.9	59.3
Fresno, CA	53.2	2.2	51.0
Baton Rouge, LA	31.6	- 3.6	35.2

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, LARGE HUBS, 1984-1988

Hub	Percent Change, 1984-1988		Percentage Point Spread, Top 5 - Other
	Top 5 Markets	All Other Markets	
Atlanta, GA	- 0.8	- 1.7	0.9
Baltimore, MD	6.4	12.6	- 6.2
Boston, MA	30.2	- 4.8	35.0
Charlotte, NC	- 5.8	2.3	3.5
Chicago, IL	- 20.7	-17.1	- 3.6
Dallas/Ft. Worth, TX	30.1	16.5	13.6
Denver, CO	- 5.7	7.4	- 13.1
Detroit, MI	- 16.0	- 8.7	- 7.3
Houston, TX	42.6	19.7	22.9
Kansas City, MO	- 31.1	- 0.7	- 30.4
Las Vegas, NV	- 11.3	-14.6	3.3
Los Angeles, CA	- 8.1	- 2.3	- 5.8
Memphis, TN	4.4	4.4	0.0
Miami/Ft. Lauderdale, FL	3.4	-14.8	18.2
Minneapolis/St. Paul, MN	26.3	0.6	25.7
New York/Newark, NY	15.3	23.7	- 8.4
Orlando, FL	0.4	-16.5	16.1
Philadelphia, PA	- 5.5	- 2.1	- 3.4
Phoenix, AZ	- 23.3	- 8.7	- 14.6
Pittsburgh, PA	33.5	-15.7	49.2
Salt Lake City, UT	19.4	- 3.9	23.3
San Diego, CA	- 11.0	- 4.9	- 6.1
San Francisco/Oakland, CA	- 8.1	- 8.4	0.3
Seattle/Tacoma, WA	- 5.3	-15.6	10.3
St. Louis, MO	- 7.5	5.2	- 12.7
Tampa, FL	12.0	-11.1	23.1
Washington, DC	17.3	- 8.1	25.4
Average (Unweighted)	3.4	- 2.5	5.9

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, MEDIUM HUBS, 1984-1988

| Hub | Percent Change, 1984-1988 | | Percentage Point Spread, |
	Top 5 Markets	All Other Markets	Top 5 - Other
Albuquerque, NM	20.4	8.4	12.0
Austin, TX	32.7	7.2	25.5
Buffalo, NY	58.5	- 21.1	79.6
Cincinnati, OH	19.8	- 0.8	20.6
Cleveland, OH	- 13.7	- 13.7	0.0
Columbus, OH	30.5	- 18.7	49.2
Dayton, OH	17.1	- 5.9	23.0
El Paso, TX	15.5	5.0	10.5
Ft. Myers, FL	- 27.6	- 26.8	- 0.8
Hartford, CT	- 14.7	- 1.8	- 12.9
Indianapolis, IN	- 16.8	- 16.5	- 0.3
Jacksonville, FL	39.3	- 11.3	50.6
Milwaukee, WI	- 7.0	- 16.8	9.8
Nashville, TN	- 19.4	- 5.0	- 14.4
New Orleans, LA	21.2	- 7.4	28.6
Norfolk, VA	63.2	- 3.2	66.4
Oklahoma City, OK	7.4	2.1	5.3
Ontario, CA	- 5.1	- 2.3	- 2.8
Portland, OR	10.8	- 12.1	22.9
Raleigh/Durham, NC	46.1	- 4.6	50.7
Reno, NV	6.6	- 5.9	12.5
Rochester, NY	13.5	- 18.7	32.2
Sacramento, CA	21.0	- 13.4	34.4
San Antonio, TX	20.0	0.8	19.2
San Jose, CA	13.5	- 0.4	13.9
Syracuse, NY	62.7	- 20.2	82.9
Tucson, AZ	- 6.8	- 14.3	7.5
Tulsa, OK	19.0	9.5	9.5
W. Palm Beach, FL	10.6	- 18.2	28.8
Average (Unweighted)	15.1	- 7.8	22.9

Source: Origin-Destination Survey of Airline Passenger Traffic -
Domestic.

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
vs. ALL OTHER MARKETS, SMALL HUBS, 1984-1988

Hub	Percent Change, 1984-1988		Percentage Point Spread, Top 5 - Other
	Top 5 Markets	All Other Markets	
Akron/Canton, OH	- 19.5	- 9.5	- 10.0
Albany, NY	- 17.1	- 20.3	3.2
Allentown, PA	- 15.7	- 20.9	5.2
Amarillo, TX	18.2	14.3	3.9
Baton Rouge, LA	31.6	- 3.6	35.2
Billings, MT	15.6	- 3.3	18.9
Birmingham, AL	- 33.6	- 20.1	- 13.5
Boise, ID	- 0.8	- 17.3	16.5
Burlington, VT	106.8	- 22.5	129.3
Cedar Rapids, IA	- 26.7	- 2.4	- 24.3
Charleston, SC	- 16.4	- 18.2	1.8
Charleston, WV	5.5	- 9.6	15.1
Chattanooga, TN	2.1	- 0.2	2.3
Colorado Springs, CO	32.7	22.0	10.7
Columbia, SC	- 6.4	- 9.4	3.0
Corpus Christi, TX	36.1	6.7	29.4
Daytona Beach, FL	- 9.2	- 28.8	19.6
Des Moines, IA	- 7.4	- 1.3	- 6.1
Eugene, OR	- 5.1	- 15.9	10.8
Fresno, CA	53.2	2.2	51.0
Ft. Wayne, IN	15.2	- 7.3	22.5
Grand Rapids, MI	16.5	- 5.8	22.3
Greensboro, NC	25.7	- 9.1	34.8
Greenville, SC	18.2	- 11.6	29.8
Harlingen, TX	38.7	10.8	27.9
Harrisburg, PA	- 4.7	- 14.0	9.3
Huntsville, AL	- 5.7	- 2.2	- 3.5
Palm Springs, CA	- 7.3	9.0	- 16.3
Long Island MacArthur, NY	10.8	2.4	8.4
Jackson, MS	7.2	- 2.0	9.2
Knoxville, TN	4.9	- 15.1	20.0
Lexington, KY	1.0	- 12.3	13.3
Lincoln, NE	4.5	- 5.4	9.9
Little Rock, AR	- 11.4	- 2.4	- 9.0
Louisville, KY	2.0	- 6.7	8.7
Lubbock, TX	19.6	0.7	18.9
Madison, WY	- 9.6	1.2	- 10.8
Melbourne, FL	26.4	- 32.9	59.3
Midland/Odessa, TX	28.1	4.5	23.6
Mobile, AL	- 8.8	- 13.2	4.4

COMPARISON OF CHANGES IN AVERAGE FARES IN TOP 5 MARKETS
VS. ALL OTHER MARKETS, SMALL HUBS, 1984-1988

Hub	Percent Change, 1984-1988		Percentage Point Spread, Top 5 - Other
	Top 5 Markets	All Other Markets	
Moline, IL	- 22.2	0.7	- 22.9
Omaha, NE	5.7	- 1.5	7.2
Portland, ME	107.8	- 21.7	129.5
Providence, RI	- 23.9	- 12.8	- 11.1
Richmond, VA	14.6	- 2.7	17.3
Roanoke, VA	1.3	- 10.4	11.7
Saginaw/Bay City, MI	- 11.2	- 17.4	6.2
Sarasota/Bradenton, FL	4.1	- 27.3	31.4
Savannah, GA	4.8	- 20.8	25.6
Shreveport, LA	- 2.5	- 9.8	7.3
Sioux Falls, SD	12.1	- 2.8	14.9
South Bend, IN	- 17.8	- 12.4	- 5.4
Spokane, WA	9.4	- 14.8	24.2
Tallahassee, FL	- 5.4	- 19.5	14.1
Toledo, OH	14.4	- 8.1	22.5
Wichita, KS	17.5	- 3.9	21.4
Average (Unweighted)	7.6	- 8.1	15.7

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

CHANGES IN AVERAGE FARES AT HIGHLY CONCENTRATED LARGE AND MEDIUM HUBS

Tables II-32 to II-34

Changes in average fares at the 8 highly concentrated large and medium hubs are compared with the changes for other hubs in Table II-32. In the 1979-1988 period, the average increase at the concentrated hubs, 77.3 percent, exceeded the change for all large and medium hubs excluding the concentrated hubs. The change for those hubs was 35.0 percent. In the 1984-1988 period, the concentrated hubs showed a 4.6 percent increase in average fares, while the other large and medium hubs had a 1.3 percent increase.

Table II-33 shows the percentage increases for the 8 concentrated hubs and the percentage increases in average mileage for each hub in the 1979-1988 period. The average mileage increase of the concentrated hubs was 10.2 percent. For the remaining hubs the change in average mileage was only 3.0 percent.

The results for the 1984-1988 period are shown in Table II-34. The average fare increase for the concentrated hubs was 4.6 percent, while for all large and medium hubs excluding the concentrated hubs the increase was 1.3 percent. The concentrated hubs had an increase in average mileage of 6.8 percent, while the increase for the remaining hubs was 7.8 percent.

CHANGES IN AVERAGE FARES AT HIGHLY CONCENTRATED LARGE AND MEDIUM HUBS

Tables II-32 to II-34

      Changes in average fares at the 8 highly concentrated large and medium hubs are compared with the changes for other hubs in Table II-32. In the 1979-1988 period, the average increase at the concentrated hubs, 77.3 percent, exceeded the change for all large and medium hubs excluding the concentrated hubs. The change for those hubs was 35.0 percent. In the 1984-1988 period, the concentrated hubs showed a 4.6 percent increase in average fares, while the other large and medium hubs had a 1.3 percent increase.

      Table II-33 shows the percentage increases for the 8 concentrated hubs and the percentage increases in average mileage for each hub in the 1979-1988 period. The average mileage increase of the concentrated hubs was 10.2 percent. For the remaining hubs the change in average mileage was only 3.0 percent.

      The results for the 1984-1988 period are shown in Table II-34. The average fare increase for the concentrated hubs was 4.6 percent, while for all large and medium hubs excluding the concentrated hubs the increase was 1.3 percent. The concentrated hubs had an increase in average mileage of 6.8 percent, while the increase for the remaining hubs was 7.8 percent.

INCREASES IN AVERAGE FARES AND AVERAGE MILEAGES
AT HIGHLY CONCENTRATED LARGE AND MEDIUM HUBS, 1979-1988

Concentrated Hubs	Percent Increase in Average Fare, 1979-1988	Percent Increase in Average Mileage, 1979-1988
Memphis	109.9%	10.6%
Cincinnati	103.7	16.6
Charlotte	93.9	7.4
Dayton	84.8	4.4
Salt Lake City	75.8	21.4
Pittsburgh	67.0	6.9
Minneapolis/St. Paul	65.6	9.5
St. Louis	65.3	5.1
8 Concentrated Hubs	77.3	10.2
All Large Hubs	38.3	3.2
All Medium Hubs	38.9	7.8
All Large Hubs & Medium Hubs Minus 8 Concentrated Hubs	35.0	3.0

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

CHANGES IN AVERAGE FARES AND AVERAGE MILEAGES
AT HIGHLY CONCENTRATED LARGE AND MEDIUM HUBS, 1984-1988

Concentrated Hubs	Percent Increase in Average Fare, 1984-1988	Percent Increase in Average Mileage, 1984-1988
Minneapolis/St. Paul	9.1%	6.6%
Cincinnati	5.3	10.0
Memphis	4.4	3.5
Salt Lake City	3.7	9.4
Charlotte	3.5	3.9
Pittsburgh	2.0	14.8
St. Louis	1.3	3.3
Dayton	0.4	- 0.6
8 Concentrated Hubs	4.6	6.8
All Large Hubs	1.4	7.0
All Medium Hubs	2.6	11.7
All Large & Medium Hubs Minus 8 Concentrated Hubs	1.3	7.8

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

CHANGES IN AVERAGE YIELD, LARGE HUBS, 1979-1988

Tables II-35 and II-36

Changes in average domestic yields at large hubs between 1979 and 1988 ranged from 90.2 percent at Memphis, Tennessee, to a decrease of 1.8 percent at Phoenix, Arizona. The 90.2 percent increase for Memphis, the highest of the large hubs, exceeds the increase in the Consumer Price Index for this period, which was 62.9 percent. The 90.2 percent increase averages 7.4 percent per year while the CPI increase averages 5.6 percent per year. (Table II-35).

As Chart II-O below shows, the highest yield increases occurred at highly concentrated hubs such as Memphis, Charlotte, St. Louis, Pittsburgh and Minneapolis/St. Paul, and hubs with a dominant carrier share of 50 to 75 percent, such as Atlanta, Dallas/Ft. Worth and Baltimore.
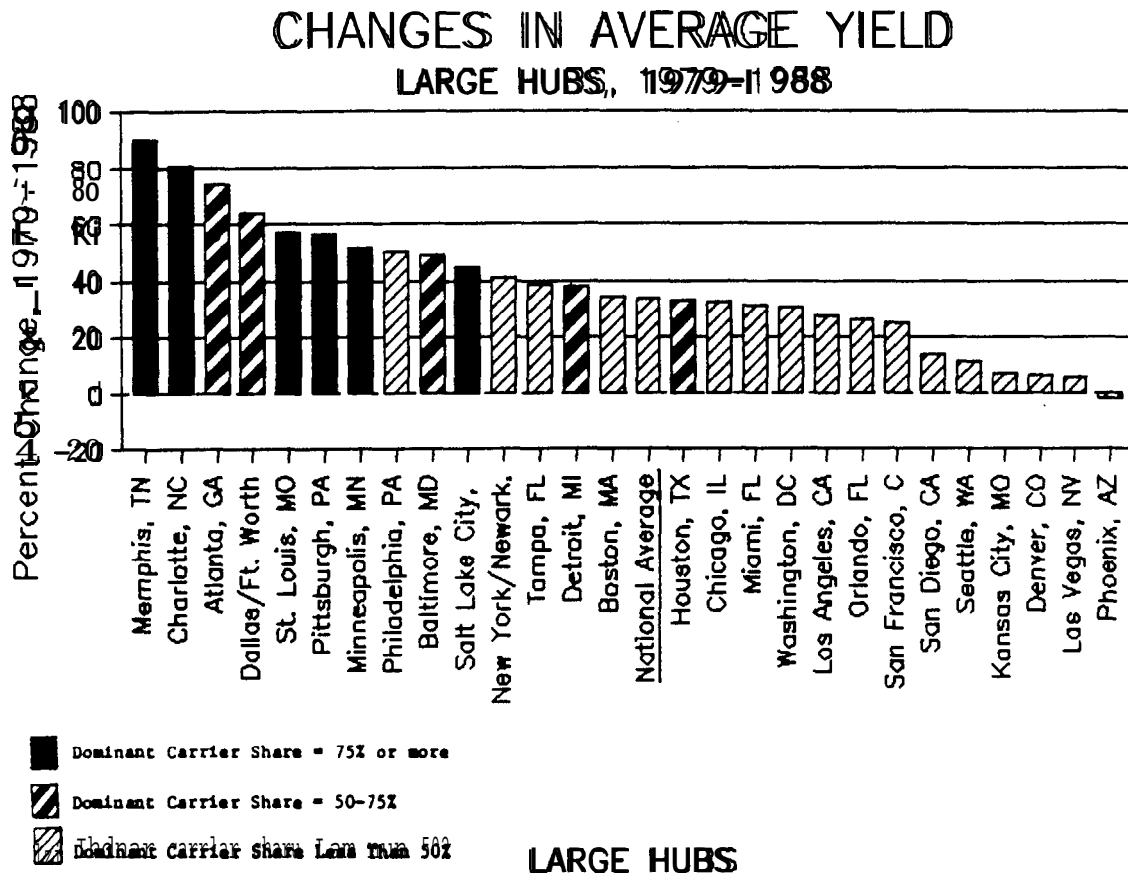
CHANGES IN AVERAGE YIELD
LARGE HUBS, 1979-1988

Dominant Carrier Share = 75% or more

Dominant Carrier Share = 50-75%

Dominant Carrier Share Less than 50%

LARGE HUBS

CHANGES IN AVERAGE YIELD, LARGE HUBS, 1979-1988
(Hubs Arrayed in Descending Order by Percent Change)

| Large Hubs | Average Yield (cents) | | Percent Change, 1979-1988 |
	1979	1988	
Memphis, TN	13.2¢	25.1¢	90.2%
Charlotte, NC	13.8	24.9	80.4
Atlanta, GA	13.2	23.0	74.2
Dallas/Ft. Worth, TX	11.9	19.5	63.9
St. Louis, MO	12.4	19.5	57.3
Pittsburgh, PA	11.7	18.3	56.4
Minneapolis/St. Paul, MN	11.9	18.0	51.3
Philadelphia, PA	10.9	16.4	50.5
Baltimore, MD	10.6	15.8	49.1
Salt Lake City, UT	11.4	16.5	44.7
New York/Newark, NY	10.0	14.1	41.0
Tampa/St. Petersburg, FL	10.1	14.0	38.6
Detroit, MI	11.3	15.6	38.1
Boston, MA	10.8	14.5	34.3
National Average	11.2	15.0	33.9
Houston, TX	12.8	17.0	32.8
Chicago, IL	11.5	15.2	32.2
Miami/Ft. Lauderdale, FL	9.3	12.2	31.2
Washington, DC	12.2	15.9	30.3
Los Angeles/Burbank/long Beach, CA	9.1	11.6	27.5
Orlando, FL	9.5	12.0	26.3
San Francisco/Oakland, CA	8.8	11.0	25.0
San Diego, CA	9.6	10.9	13.5
Seattle/Tacoma, WA	10.6	11.8	11.3
Kansas city, MO	13.1	14.0	6.9
Denver, CO	12.5	13.3	6.4
Las Vegas, NV	9.3	9.8	5.4
Phoenix, AZ	11.0	10.8	- 1.8

Source : Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Average domestic yields at the **27** large hubs in **1979** ranged from **8.8** cents per mile at San Francisco/Oakland to **13.8** per mile at Charlotte, **N.C.** In **1988,** average yield ranged from **9.8** cents per **mile** at Las Vegas to **25.1** cents at Memphis. The range between the high and low yields widened from **57** percent in **1979** to **156** percent in **1988.**

Table **II-36** and Chart II-P show the distribution of yield changes at the large hubs. Seven hubs were in the **30.0** to **39.9** percent group, the modal group. In terms of the national **average** increase of **33.9** percent, **14** hubs were above the average and **13** were below.

CHANGES IN AVERAGE YIELD
LARGE HUBS, 1979-1988
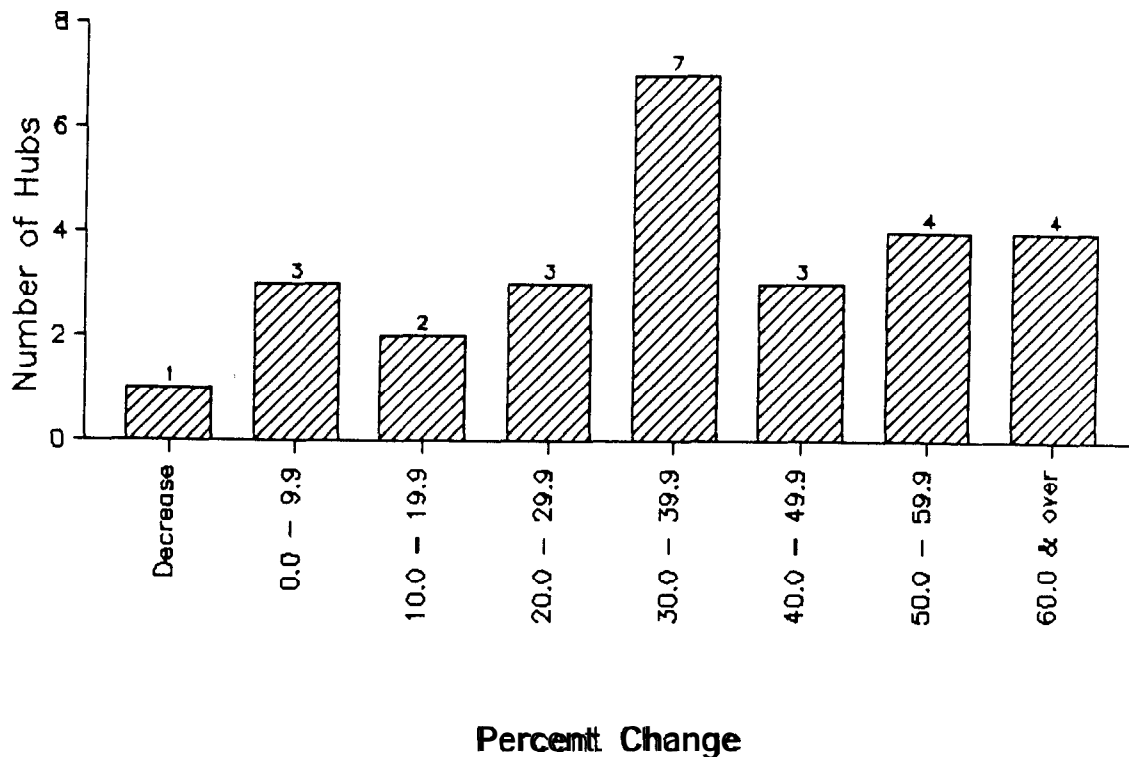
Percent Change

CHANGE IN AVERAGE YIELD, LARGE HUBS, 1979-1988

Percent Change, 1979-1988	Number of Large Hubs	Percent of Large Hubs *
Decrease	1	3.7%
0.0 - 9.9	3	11.1
10.0 - 19.9	2	7.4
20.0 - 29.9	3	11.1
30.0 - 39.9	7	25.9
40.0 - 49.9	3	11.1
50.0 - 59.9	4	14.8
60.0 & over	4	14.8
Total	27	100.0

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*-Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE YIELD. MEDIUM HUBS. 1979-1988

Tables II-37 and II-38

     Changes-in average yield at the medium hubs between 1979 and 1988 ranged from 77.0 percent at Dayton, Ohio to a decrease of 7.0 percent at El Paso, Texas. These compare with a national average increase of 33.9 percent. The 77.0 percent increase for Dayton averages about 6.6 percent per year, which is higher than the rate of increase in the Consumer Price Index for this period of 5.6 percent per year. (Table II-37).

     Two of the top 3 increases were at Dayton and Cincinnati, two highly concentrated hubs. Raleigh/Durham and Nashville, hubs with a dominant carrier share in the 50-75 percent range, were also among the highest ranked hubs.
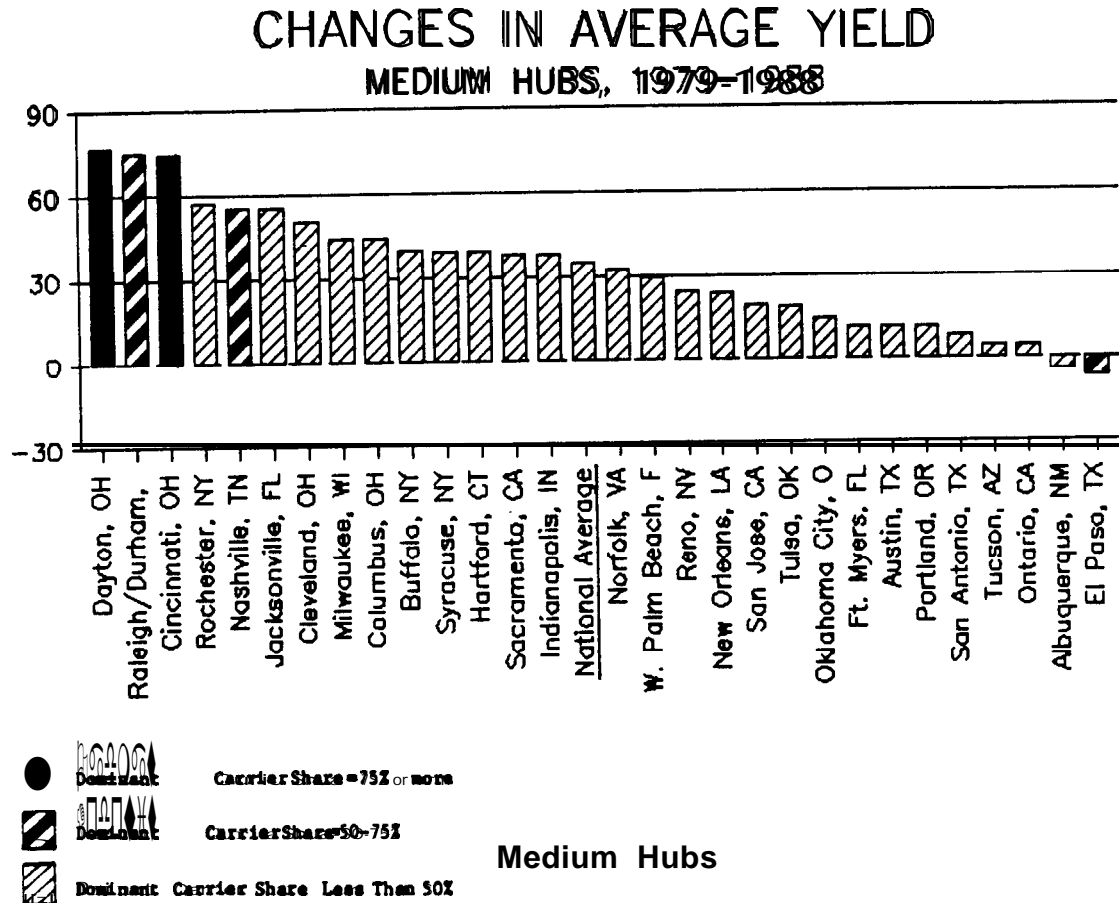
CHANGES IN AVERAGE YIELD
MEDIUM HUBS, 1979-1988

● Dominant Carrier Share =75% or more

◪ Dominant Carrier Share=50-75%

◨ Dominant Carrier Share Less Than 50%

Medium Hubs

CHANGES IN AVERAGE YIELD, MEDIUM HUBS, 1979-1988
(Hubs Arrayed in Descending Order by Percent Change)

Medium Hubs	Average Yield (cents)		Percent Change, 1979-1988
	1979	1988	
Dayton, OH	12.2¢	21.6¢	77.0%
Raleigh/Durham, NC	13.1	22.9	74.8
Cincinnati, Cl-I	12.9	22.5	74.4
Rochester, NY	11.8	18.5	56.8
Nashville, TN	13.7	21.3	55.5
Jacksonville, FL.	12.2	18.9	54.9
Cleveland, OH	10.9	16.4	50.5
Milwaukee, WI	11.3	16.3	44.2
Columbus, OH	12.5	18.0	44.0
Buffalo/Niagara Falls, NY	11.8	16.5	39.8
Syracuse, NY	12.0	16.7	39.2
Hartford, CT	10.6	14.6	37.7
Sacramento, CA	10.1	13.9	37.6
Indianapolis, IN	12.4	16.7	34.7
National Average	11.2	15.0	33.9
Norfolk, VA	12.7	16.8	32.3
W. Palm Beach, FL	12.1	15.6	28.9
Reno, NV	10.0	12.4	24.0
New Orleans, LA	12.2	15.1	23.8
San Jose, CA	12.0	14.3	19.2
Tulsa, OK	14.6	17.3	18.5
Oklahoma City, OK	14.2	16.2	14.1
Ft. Myers, FL	10.5	11.7	11.4
Austin, TX	14.4	16.0	11.1
Portland, OR	11.8	13.1	11.0
San Antonio, TX	13.6	14.7	8.1
Tucson, AZ	11.5	12.0	4.3
Ontario, CA	12.2	12.7	4.1
Albuquerque, NM	14.2	13.6	- 4.2
El Faso, TX	15.8	14.7	- 7.0

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Average yields at the **29** medium hubs in **1979** ranged from **10.0** cents per mile at **Reno,** Nevada to **15.8** cents per mile at El Paso, Texas. In **1988,** yields ranged from **11.7** cents per mile at Ft. Myers, Florida to **22.9** cents per mile at Raleigh/Durham, **N.C.** As with large hubs, the range between high and low yields increased from **58** percent in **1979** to **96** percent in **1988.**

Table **II-37** and Chart II-Q show the distribution of yield changes at the medium hubs. Fifteen of the **29** hubs fell within the **10.0** to **39.9** percent range. In terms of the national average of **33.9** percent, **14** hubs were above the average and **15** were below.

CHANGES IN AVERAGE YIELD
MEDIUM HUBS, 1979-1988

Percent Change

CHANGE IN AVERAGE YIELD, MEDIUM HUBS, 1979-1988

Percent Change, 1979-1988	Number of Medium Hubs	Percent of Medium Hubs*
Decrease	2	6.9%
0.0 - 9.9	3	10.3
10.0 - 19.9	6	20.7
20.0 - 29.9	3	10.3
30.0 - 39.9	6	20.7
40.0 - 49.9	2	6.9
50.0 - 59.9	4	13.8
60.0 & over	3	10.3
Total	29	100.0

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE YIELD, SMALL HUBS, 1979-1988

Tables II-39 and II-40

     Changes in average yield at the small hubs between 1979 and 1988 ranged from 84.3 percent at Chattanooga, Tennessee to a decrease of 15.8 percent at Colorado Springs, Colorado. The yield increase at Chattanooga averaged 7.0 percent per year, higher than the rate of increase in the Consumer Price Index for this period of 5.6 percent per year.   (Table II-39).

     Yield increases at the more concentrated hubs were not clustered at the high end of the distribution but were fairly evenly spread throughout the range.   (Chart II-R).

CHANGES IN AVERAGE YIELD
SMALL HUBS, 1979-1988

Dominant Carrier Share = 75% or more

Dominant Carrier Share = 50-75%

Dominant Carrier Share Less Than 50%

SMALL HUBS

     Average yields at the 56 small hubs in 1979 ranged from 10.5 cents per mile at Palm Springs, California to 19.0 cents per mile at Midland/Odessa, Texas.   In 1988, average yields ranged from 12.5 cents per mile at Sarasota/Bradenton, Florida to 25.8 cents per mile at Chattanooga.   The range between high and low yields widened from 81 percent in 1979 to 106 percent in 1988.

CHANGES IN AVERAGE YIELD, SMALL HUBS, 1979-1988
(Hubs Arrayed in Descending Order by Percent Change)

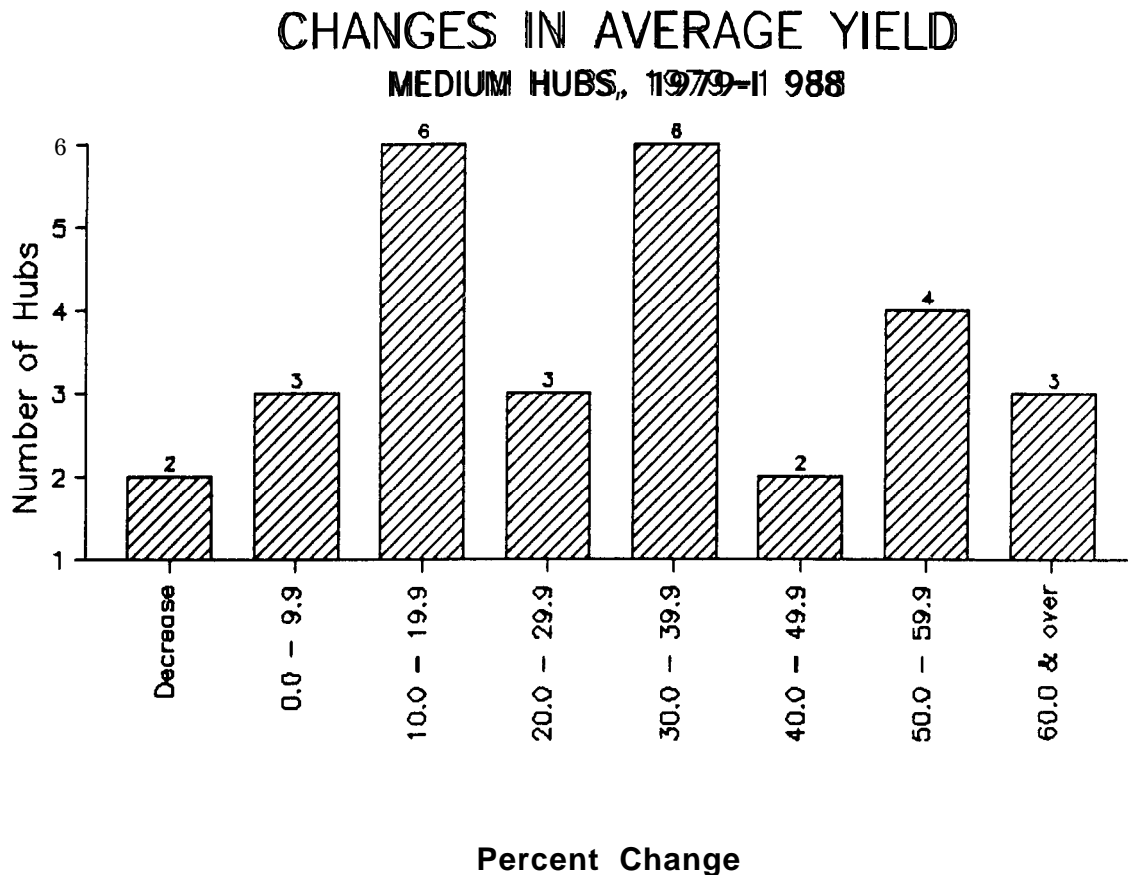| Small Hubs	Average Yield (cents)		Percent Change, 1979-1988
	1979	1988	
Chattanooga, TN	14.0¢	25.8¢	84.3%
Huntsville, AL	13.8	25.1	81.9
Greensboro, NC	13.4	23.5	75.4
Ft. Wayne, IN	12.1	21.2	75.2
Richmond, VA	13.5	23.1	71.1
Knoxville, TN	13.6	22.9	68.4
Lexington, KY	13.9	23.3	67.6
Saginaw/Bay City, MI	11.2	18.7	67.0
Columbia, SC	13.2	22.0	66.7
Greenville, SC	14.4	23.9	66.0
Jackson, MS	13.3	21.9	64.7
Louisville, KY	13.2	21.3	61.4
South Bend, IN	11.4	18.4	61.4
Charleston, WV	14.7	23.7	61.2
Tallahassee, FL	14.6	23.3	59.6
Grand Rapids, MI	11.6	18.5	59.5
Charleston, SC	12.5	19.9	59.2
Little Rock, AR	13.2	20.7	56.8
Toledo, OH	11.6	18.0	55.2
Moline, IL	11.8	18.3	55.1
Fresno, CA	10.6	16.3	53.8
Cedar Rapids, IA	11.5	17.6	53.0
Birmingham, AL	13.2	20.0	51.5
Shreveport, LA	13.5	20.3	50.4
Savannah, GA	13.0	19.2	47.7
Allentown, PA	11.5	16.7	45.2
Harrisburg, PA	13.4	19.1	42.5
Baton Rouge, LA	13.9	19.6	41.0
Mobile, AL	13.9	19.6	41.0
Madison, WI	13.0	18.2	40.0
Boise, ID	12.4	17.3	39.5
Wichita, KS	12.9	18.0	39.5
Des Moines, IA	12.2	17.0	39.3
Amarillo, TX	13.0	18.1	39.2
Roanoke, VA	16.1	22.4	39.1
Akron/Canton, OH	11.2	15.4	37.5
Omaha, NE	12.0	16.5	37.5
Harlingen, TX	11.5	15.8	37.4
Albany, NY	12.3	16.7	35.8
Spokane, WA	11.7	15.7	34.2
Daytona Beach, FL	10.6	14.2	34.0
National Average	11.2	15.0	33.9
Corpus Christi, TX	13.2	17.6	33.3
Melbourne, FL	11.2	14.8	32.1
Lincoln, NE	12.3	15.7	27.6
Billings, MT	13.5	17.2	27.4
Sioux Falls, SD	13.9	17.5	25.9

CHANGES IN AVERAGE YIELD, SMALL HUBS, 1979-1988
(Hubs Arrayed in Descending Order by Percent Change)

| Large Hubs | Average Yield (cents) | | Percent Change, 1979-1988 |
	1979	1988	
Palm Springs, CA	10.5¢	13.1¢	24.8%
Portland, ME	12.2	15.2	24.6
Providence, RI	11.7	14.3	22.2
Eugene, OR	11.7	14.2	21.4
Sarasota/Bradenton, FL	10.6	12.5	17.9
Burlington, VT	13.2	14.4	9.1
Lubbock, TX	16.3	15.8	- 3.1
Long Island MacArthur, NY	15.5	14.2	- 8.4
Midland/Odessa, TX	19.0	16.2	-14.7
Colorado Springs, CO	17.7	14.9	-15.8

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Table **II-40** and Chart II-S show the distribution of yield changes at the small hubs. Forty-five of the changes were concentrated between **20.0** and **69.9** percent, with the **30.0** to **39.9** percent-group being the modal group. In terms of the national average of **33.9** percent, **41** small hubs were above the average and **15** were below.

CHANGES IN AVERAGE YIELD
SMALL HUBS, 1979-1988

Number of Hubs (y-axis), Percent Change (x-axis)

Category	Value
Decrease	4
0.0 – 9.9	1
10.0 – 19.9	1
20.0 – 29.9	7
30.0 – 39.9	13
40.0 – 49.9	6
50.0 – 59.9	10
60.0 – 69.9	9
70.0 – 79.9	3
80.0 & OVER	2
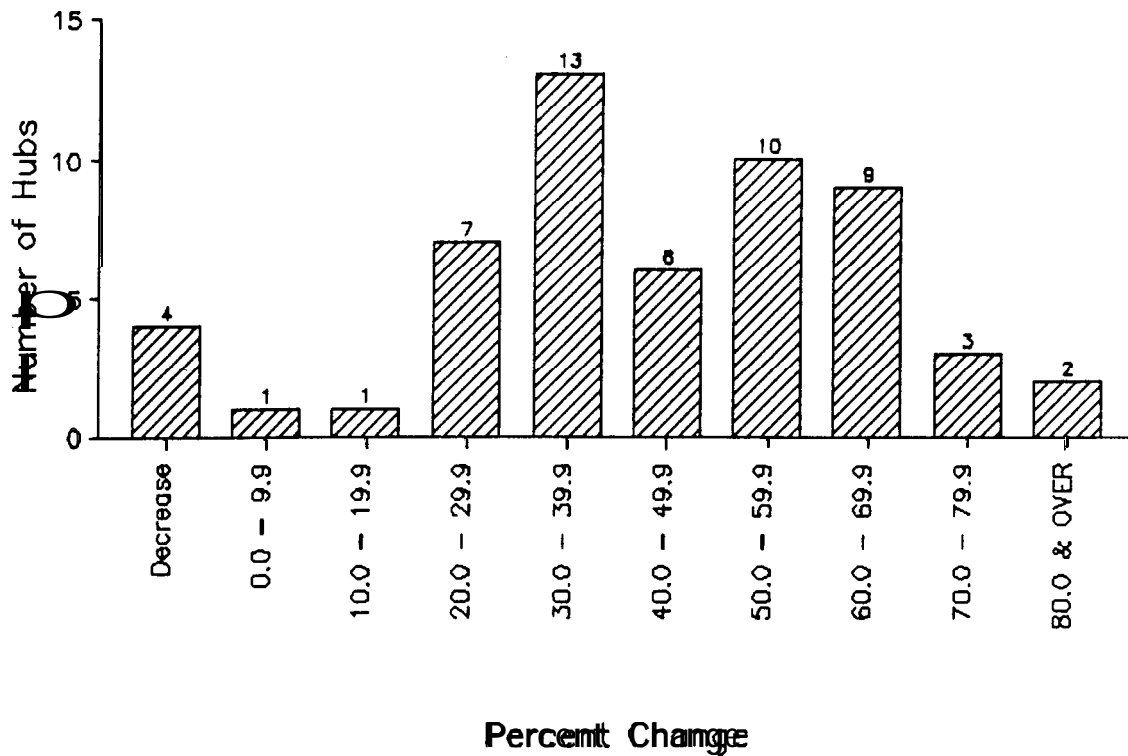
CHANGE IN AVERAGE YIELD, SMALL HUBS, 1979-1988

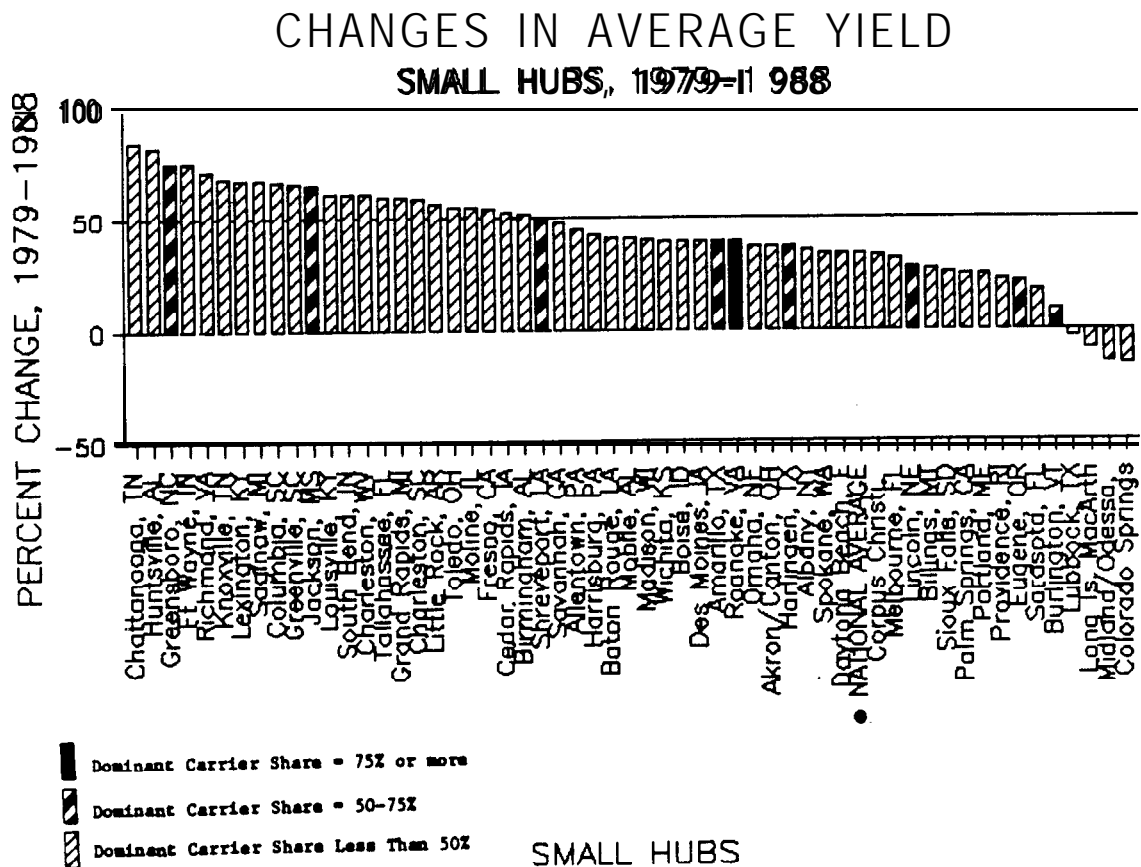| Percent Change, 1979-1988	Number of Small Hubs	Percent of Small Hubs*
Decrease	4	7.1%
0.0 - 9.9	1	1.8
10.0 - 19.9	1	1.8
20.0 - 29.9	7	12.5
30.0 - 39.9	13	23.2
40.0 - 49.9	6	10.7
50.0 - 59.9	10	17.9
60.0 - 69.9	9	16.1
70.0 - 79.9	3	5.4
80.0 - 89.9	2	3.6
Total	56	100.0

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE YIELD, NONHUBS, 1979-1988

Tables II-41 and II-42

Changes in average yields at the nonhubs between 1979 and 1988 ranged from 266.2 percent at Borrego Springs, California to a decrease of 35.2 percent at Blythe, California.

The nonhub group contains 362 cities. These have not been arrayed as in the case of the hubs, but full data for each are shown in Appendix II-l. Table II-41 lists the 32 nonhubs having yield increases of 100 percent or more.

Average yields at the 362 nonhubs in 1979 ranged from 7.7 cents per mile at Borrego Springs, California to 44.3 cents per mile at Blythe, California. In 1988, average yields ranged from 13.0 cents per mile at Jackson, Wyoming to 59.4 cents per mile at New Bedford, Massachusetts. The range between high and low fares narrowed from 475 percent in 1979 to 357 percent in 1988.

Table II-42 and Chart II-T show the distribution of yield changes at the nonhubs. The modal group was the 40.0 to 49.9 percent group, which included 50 points. In terms of the national average of 33.9 percent, 248 nonhubs were above the average and 114 were below.

CHANGES IN AVERAGE YIELD
NONHUBS, 1979-1988
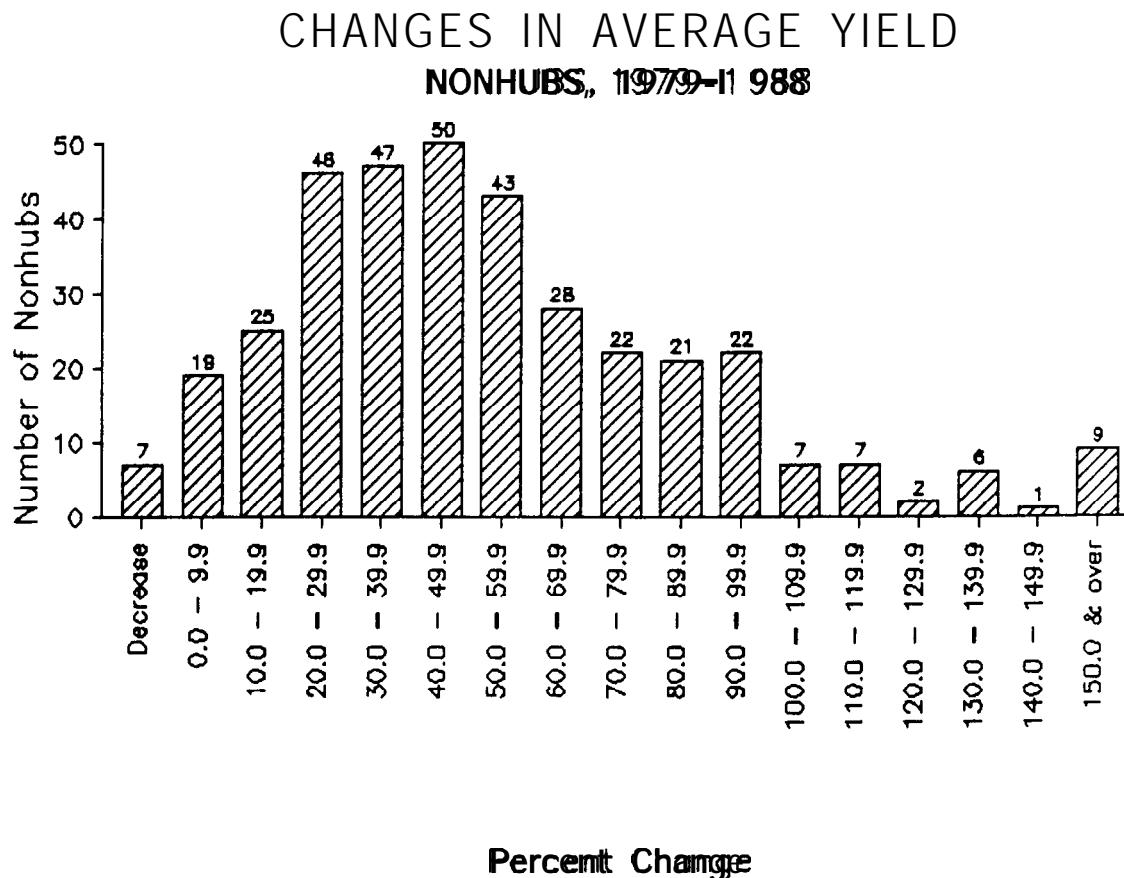
NONHUBS WITH INCREASES IN AVERAGE YIELDS
OF 100 PERCENT OR MORE, 1979-1988
(Arrayed in Descending Order by Percent Change)

City	Sample Passengers 1979		Average Yield (cents) 1979	1988	Percent Change, 1979-1988
Borrego Springs, CA	1	24	7.7	28.2	266.2
Bar Harbor, ME	777	3,584	13.7	43.0	213.9
Pendleton, OR	4,398	1,477	11.1	31.7	185.6
Augusta, ME	2,304	3,222	13.2	36.1	173.5
Ottumwa, I A	260	30	8.9	23.4	162.9
Sterling/Rock Falls, IL	184	36	15.7	41.0	161.1
New Bedford, MA	319	204	22.8	59.4	160.5
Rockland, ME	814	2,145	14.1	36.6	159.6
Madawaska/Ft. Kent, ME	10	20	17.7	45.4	156.5
Cumberland, MD	167	67	18.2	44.9	146.7
Elko, NV	1,030	1,409	13.8	32.9	138.4
Hyannis, MA	7,848	4,166	13.9	32.5	133.8
Hot Springs, VA	204	105	21.2	49.5	133.5
Coeur d'Alene, I D	6	31	18.9	44.0	132.8
Ely, NV	313	101	16.1	37.3	131.7
Modesto, CA	4,177	2,005	10.1	23.4	131.7
Gadsden, AL	328	81	15.6	35.8	129.5
Visalia, CA	1,630	1,551	12.3	27.3	122.0
Keene, NH	1,628	1,226	16.3	35.8	119.6
Salem, OR	1,577	276	12.9	28.3	119.4
Lebanon, NH	5,557	5,017	13.3	29.1	118.8
Mt. Vernon, IL	435	26	15.6	34.1	118.6
Jonesboro, AR	180	43	19.6	42.7	117.9
W. Yellowstone, MT	894	305	13.1	28.4	116.8
Moses Lake, WA	62	479	15.4	33.3	116.2
Carbondale, IL	803	51	17.0	35.5	108.8
Alpena, MI	2,047	743	16.0	33.4	108.8
Alliance, NE	141	41	21.7	45.1	107.8
Paducah, KY	6,348	4,515	15.1	31.3	107.3
Lake Tahoe, CA	2,198	12,452	11.8	24.1	104.2
Sidney, NE	38	23	17.0	34.7	104.1
Bloomington, IN	839	84	12.6	25.3	100.8

CHANGE IN AVERAGE YIELD, NONHUBS, 1979-1988

Percent Change, 1979-1988	Number of Nonhubs	Percent of Nonhubs
Decrease	7	1.9
0.0 - 9.9	19	5.2
10.0 - 19.9	25	6.9
20.0 - 29.9	46	12.7
30.0 - 39.9	47	13.0
40.0 - 49.9	50	13.8
50.0 - 59.9	43	11.9
60.0 - 69.9	28	7.7
70.0 - 79.9	22	6.1
80.0 - 89.9	21	5.8
90.0 - 99.9	22	6.1
100.0 - 109.9	7	1.9
110.0 - 119.9	7	1.9
120.0 - 129.9	2	0.6
130.0 - 139.9	6	1.7
140.0 - 149.9	1	0.3
150.0 & over	9	2.5
Total	362	100.0

NUMBER AND PERCENT OF HUBS AND NONHUBS HAVING CHANGES IN AVERAGE YIELDS BELOW AND ABOVE NATIONAL AVERAGE, 1979-1988

Table II-43

Overall, one-third (157) of the 474 points analyzed had changes in average yields in the 1979-1988 period below the national average of 33.9 percent. Two-thirds (317) of the points were above the average. Large hubs, which have the greatest impact on the national average, had 13 below and 14 above the average. Medium hubs had 15 below and 14 above the average. Small hubs had 15 (27 percent) below and 41 (73 percent) above the average. Of the 362 nonhubs, 114 (31 percent) were below the average and 248 (69 percent) were above.

NUMBER AND PERCENT OF HUBS AND NONHUBS HAVING CHANGES
IN AVERAGE YIELDS BELOW AND ABOVE NATIONAL AVERAGE
1979-1988

| Hub Class | Number of Hubs -- | | Percent of Hubs -- | |
	Below Average	Above Average	Below Average	Above Average
Large	13	14	33	52
Medium	15	14	52	48
Small	15	41	27	73
Nonhub	114	248	31	69
Total	157	317	33	67

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

CHANGES IN AVERAGE YIELDS, LARGE HUBS, 1984-1988

Tables II-44 and II-45

        Changes in average yields at large hubs between 1984 and 1988 ranged from 26.9 percent at Houston to a decrease of 19.6 percent at Chicago. These compare with a national average decrease of 6.2 percent. The 26.9 percent increase for Houston averages 6.1 percent per year, which is higher than the increase in the Consumer Price Index, which averaged 3.3 percent per year (Table II-44).

        Chart II-U arrays the yield changes for the large hubs. Most of the highly concentrated hubs -- Minneapolis/St. Paul, Memphis, Charlotte, St. Louis and Salt Lake City -- were above the national average. Only Pittsburgh was below. Three hubs with a dominant carrier having a 50 to 75 percent share were above average -- Houston, Dallas/Ft. Worth and Baltimore. Detroit and Atlanta were below.
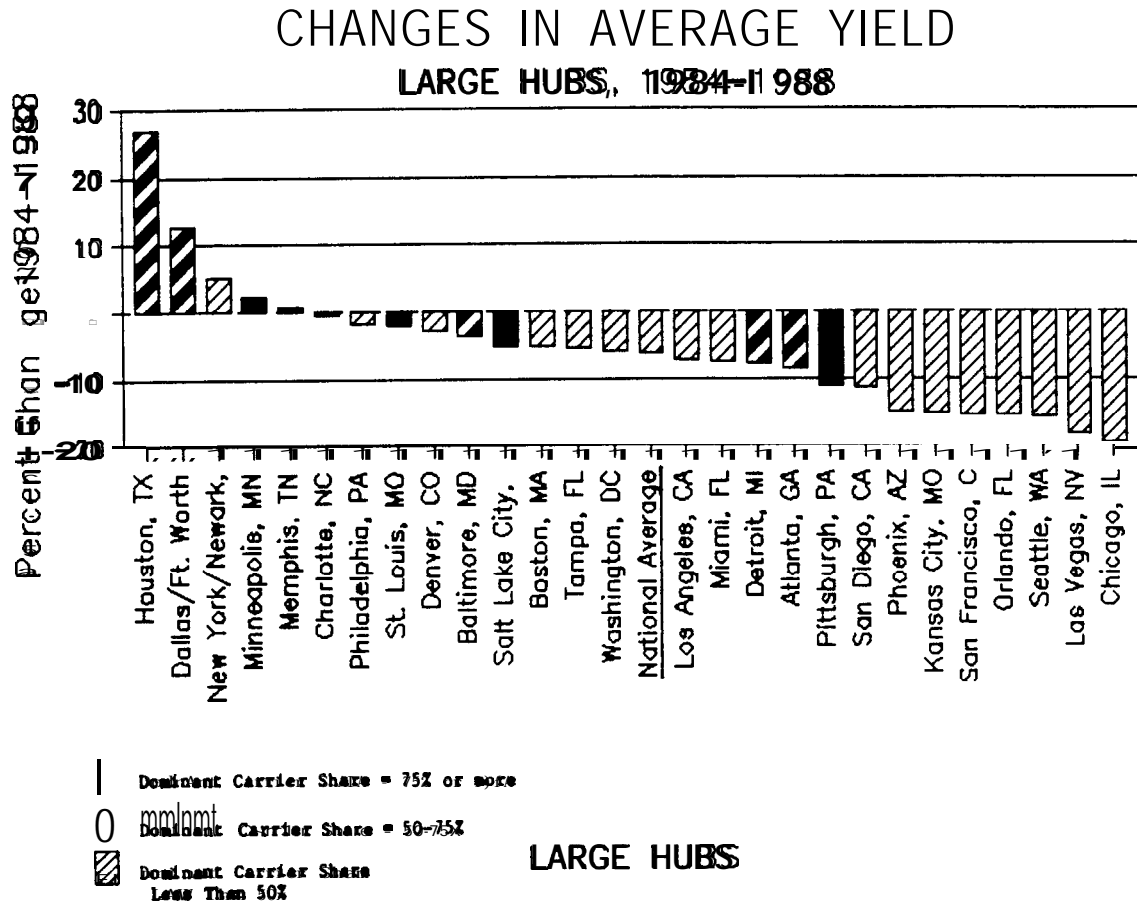
CHANGES IN AVERAGE YIELD
LARGE HUBS, 1984-1988

LARGE HUBS

CHANGES IN AVERAGE YIELD, LARGE HUBS, 1984-1988
(Hubs Arrayed in Descending Order by Percent Change)

| Large Hubs | Average Yield (cents) | | Percent Change, 1984-1988 |
	1984	1988	
Houston, TX	13.4¢	17.0¢	26.9%
Dallas/Ft. Worth, TX	17.3	19.5	12.7
New York/Newark, NY	13.4	14.1	5.2
Minneapolis/St. Paul, MN	17.6	18.0	2.3
Memphis, TN	24.9	25.1	0.8
Charlotte, NC	25.0	24.9	- 0.4
Philadelphia, PA	16.7	16.4	- 1.8
St. Louis, MO	19.9	19.5	- 2.0
Denver, CO	13.7	13.3	- 2.9
Baltimore, MD	16.4	15.8	- 3.7
Boston, MA	15.3	14.5	- 5.2
salt Lake city, UT	17.4	16.5	- 5.2
Tampa/St. Petersburg, FL	14.8	14.0	- 5.4
Washington, DC	16.9	15.9	- 5.9
National Average	16.0	15.0	- 6.2
Los Angeles/Burbank/Long Beach, CA	12.5	11.6	- 7.2
Miami/Ft. Lauderdale, FL	13.2	12.2	- 7.6
Detroit, MI	16.9	15.6	- 7.7
Atlanta, GA	25.1	23.0	- 8.4
Pittsburgh, PA	20.6	18.3	-11.2
San Diego, CA	12.3	10.9	-11.4
Phoenix, AZ	12.7	10.8	-15.0
Kansas city, MO	16.5	14.0	-15.2
San Francisco/Oakland, CA	13.0	11.0	-15.4
Orlando, FL	14.2	12.0	-15.5
Seattle/Tacoma, WA	14.0	11.8	-15.7
Las Vegas, NV	12.0	9.8	-18.3
Chicago, IL	18.9	15.2	-19.6

Source : **Origin-Destination Survey** of Airline Passenger Traffic - Domestic.

Average yields at the **27** large hubs in **1984** ranged from
12.0 cents per mile at Las Vegas to **25.1** cents per mile at
Atlanta. In **1988,** average yields ranged from **9.8** cents per
mile at Las-Vegas to **25.1** cents per **mile at** Memphis. The
range between the high and low yields widened from **109** percent
in **1984** to **156** per percent in **1988.**

Table **II-45** and Chart II-V show the distribution of yield
changes at the large hubs. Twenty-two hubs **(81** percent) had
decreases in average yields. Thirteen fell in the **-0.1** to **-9.9**
percent group and nine fell in the **-10.0** to **-19.9** percent group.
In terms of the national average of **-6.2** percent, **14** large hubs
were above the average and **13** were below.

CHANGES IN AVERAGE YIELD
LARGE HUBS, 1984-1988
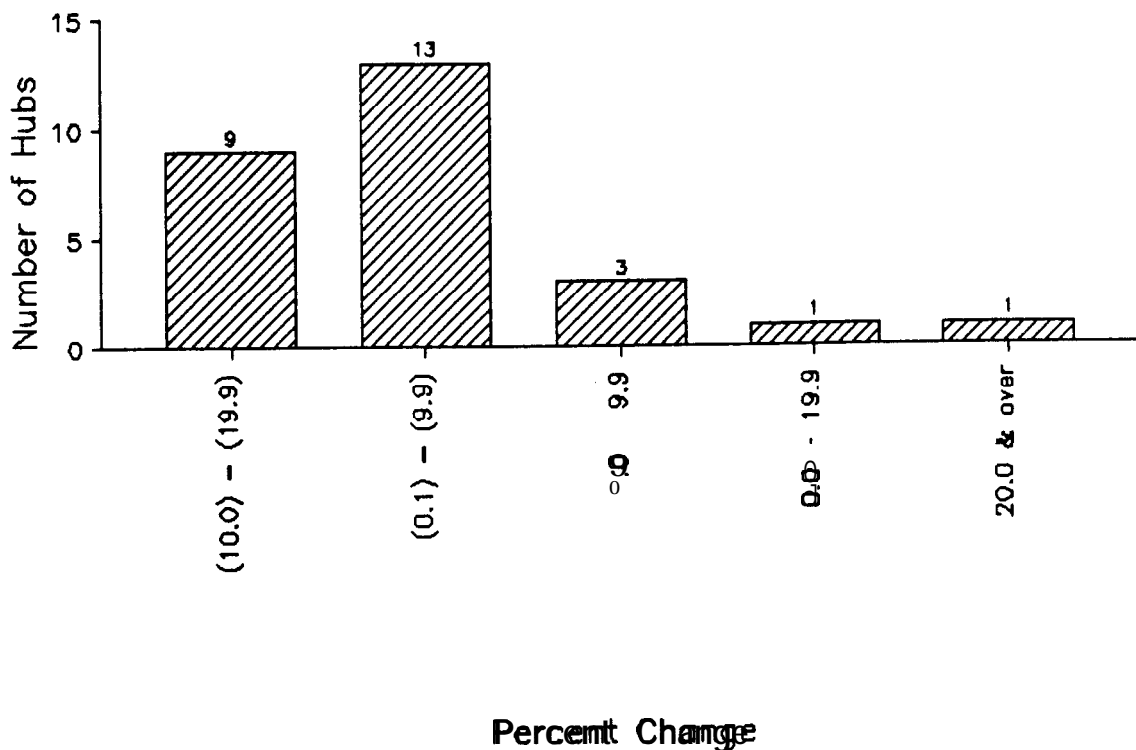
CHANGE IN AVERAGE YIELD, LARGE HUBS, 1984-1988

Percent Change, 1984-1988	Number of Large Hubs	Percent of Large Hubs*
(10.0) - (19.9)	9	33.3
(0.1) - (9.9)	13	48.1
0.0 - 9.9	3	11.1
10.0 - 19.9	1	3.7
20.0 - 29.9	1	3.7
Total	27	100.0

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* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE YIELDS, MEDIUM HUBS, 1984-1988

Tables II-46 and II-47

      Changes in average yields at the medium hubs between 1984 and 1988 ranged from 11.2 percent at Jacksonville, Florida to a decrease of 27.3 percent at Ft. Myers, Florida. The 11.2 percent yield increase for Jacksonville averages 2.7 percent per year, which is below the rate for the Consumer Price Index for the period of 3.3 percent per year. (Table II-46).

      Two highly concentrated hubs had yield changes above the national average: Dayton and Cincinnati. (Chart II-W).
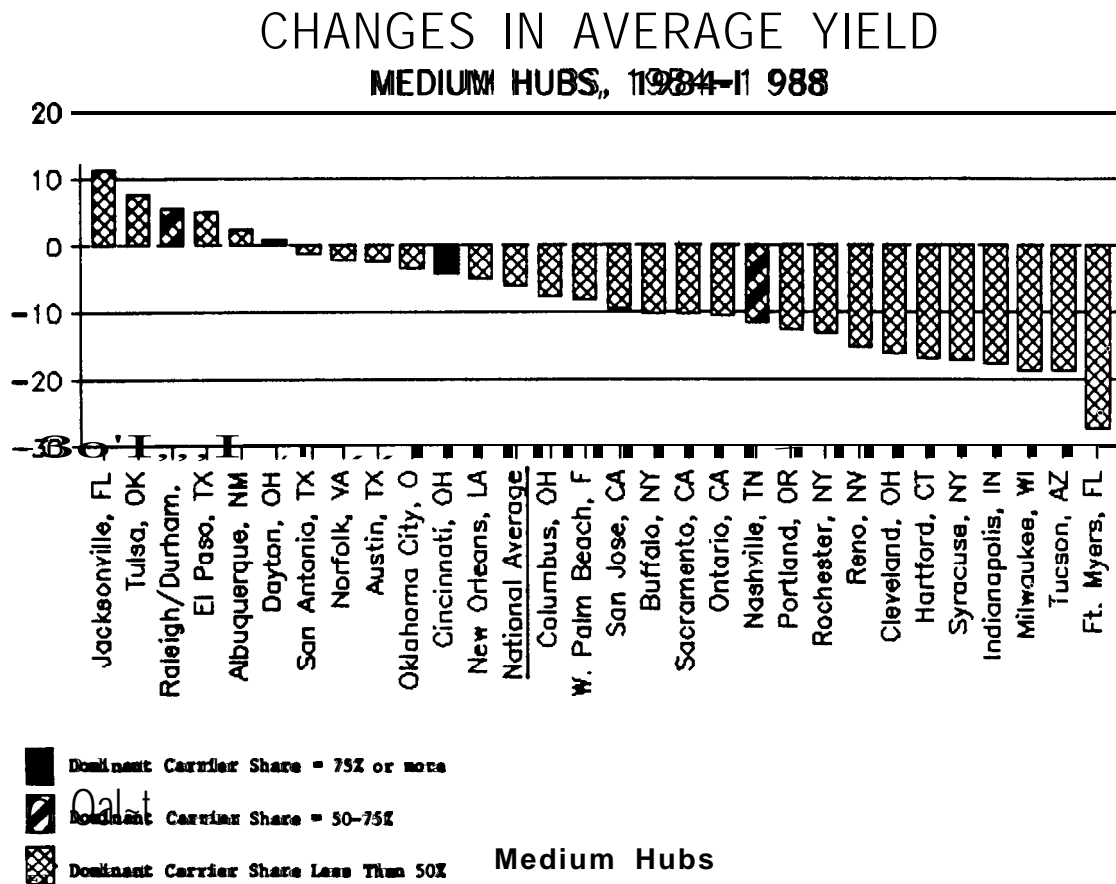
CHANGES IN AVERAGE YIELD

MEDIUM HUBS, 1984-1988

Medium Hubs

CHANGES IN AVERAGE YIELD, MEDIUM HUBS, 1984-1988
(Hubs Arrayed in Descending Order by Percent Change)

| Large Hubs | Average Yield (cents) | | Percent Change, 1984-1988 |
	1984	1988	
Jacksonville, FL	17.0¢	18.9¢	11.2%
Tulsa, OK	16.1	17.3	7.5
Raleigh/Durham, NC	21.7	22.9	5.5
El Paso, TX	14.0	14.7	5.0
Albuquerque, NM	13.3	13.6	2.3
Dayton, OH	21.4	21.6	0.9
San Antonio, TX	14.9	14.7	- 1.3
Norfolk, VA	17.2	16.8	- 2.3
Austin, TX	16.4	16.0	- 2.4
Oklahoma City, OK	16.8	16.2	- 3.6
Cincinnati, OH	23.5	22.5	- 4.3
New Orleans, LA	15.9	15.1	- 5.0
National Average	16.0	15.0	- 6.2
Columbus, OH	19.5	18.0	- 7.7
W. Palm Beach, FL	17.0	15.6	- 8.2
San Jose, CA	15.8	14.3	- 9.5
Buffalo/Niagara Falls, NY	18.4	16.5	-10.3
Sacramento, CA	15.5	13.9	-10.3
Ontario, CA	14.2	12.7	-10.6
Nashville, TN	24.1	21.3	-11.6
Portland, OR	15.0	13.1	-12.7
Rochester, NY	21.3	18.5	-13.1
Reno, NV	14.6	12.4	-15.1
Cleveland, OH	19.6	16.4	-16.3
Hartford, CT	17.6	14.6	-17.0
Syracuse, NY	20.2	16.7	-17.3
Indianapolis, IN	20.3	16.7	-17.7
Milwaukee, WI	20.1	16.3	-18.9
Tucson, AZ	14.8	12.0	-18.9
Ft. Myers, FL	16.1	11.7	-27.3

SOURCE: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Average yields at the **29** medium hubs in **1984** ranged from **13.3** cents per mile at Albuquerque, **New** Mexico to **24.1** cents at Nashville.   In **1988,** average yields ranged from **11.7** cents **per mile at** Ft. Myers, Florida to **22.9** cents per mile at Raleigh/ Durham, **N.C..**   The range between high and low yields widened from **81** percent in **1984** to **96** percent in **1988.**

Table **II-47** and Chart II-X show the distribution of yield changes at the medium hubs.   Twenty-three of the **29** medium hubs had decreases in yields.   The modal group was the **-10.0** to **-19.9** percent group with **13** hubs.   In terms of the national average of **-6.2** percent, **12** hubs were above the average and **17** hubs were below.

CHANGES IN AVERAGE YIELD
MEDIUM HUBS, 1984-1988

Percent Change

CHANGE IN AVERAGE YIELD, MEDIUM HUBS, 1984-1988

Percent Change, 1984-1988	Number of Medium Hubs	Percent of Medium Hubs*
(20.0) - (29.9)	1	3.4
(10.0) - (19.9)	13	44.8
(0.1) - (9.9)	9	31.0
0.0 - 9.9	5	17.2
10.0 - 19.9	1	3.4
Total	29	100.0

---

* Percentages do not add to 100.0 due to rounding.

CHANGES IN AVERAGE YIELDS, SMALL HUBS, 1984-1988

Tables II-48 and II-49

Changes in average yields at the small hubs between **1984** and **1988** ranged from **13.1** percent at Amarillo, Texas to a decrease of **28.4** percent at Akron/Canton, Ohio. The fare increase at Amarillo averaged **3.1** percent per year, which was less than the **3.3** percent average annual increase in the Consumer Price Index in this period. (Table **II-48**).

The one highly concentrated small hub, **Roanoke,** Virginia, was below the national **average.** Six of the small hubs with a dominant carrier having a **50-75** percent share were above the **natioanl** average: Amarillo, **Harlingen,** Midland/Odessa, Lubbock, Greensboro and Jackson, Miss. Four others were below the **natioanl** average: Eugene, Burlington, Lincoln and Shreveport.
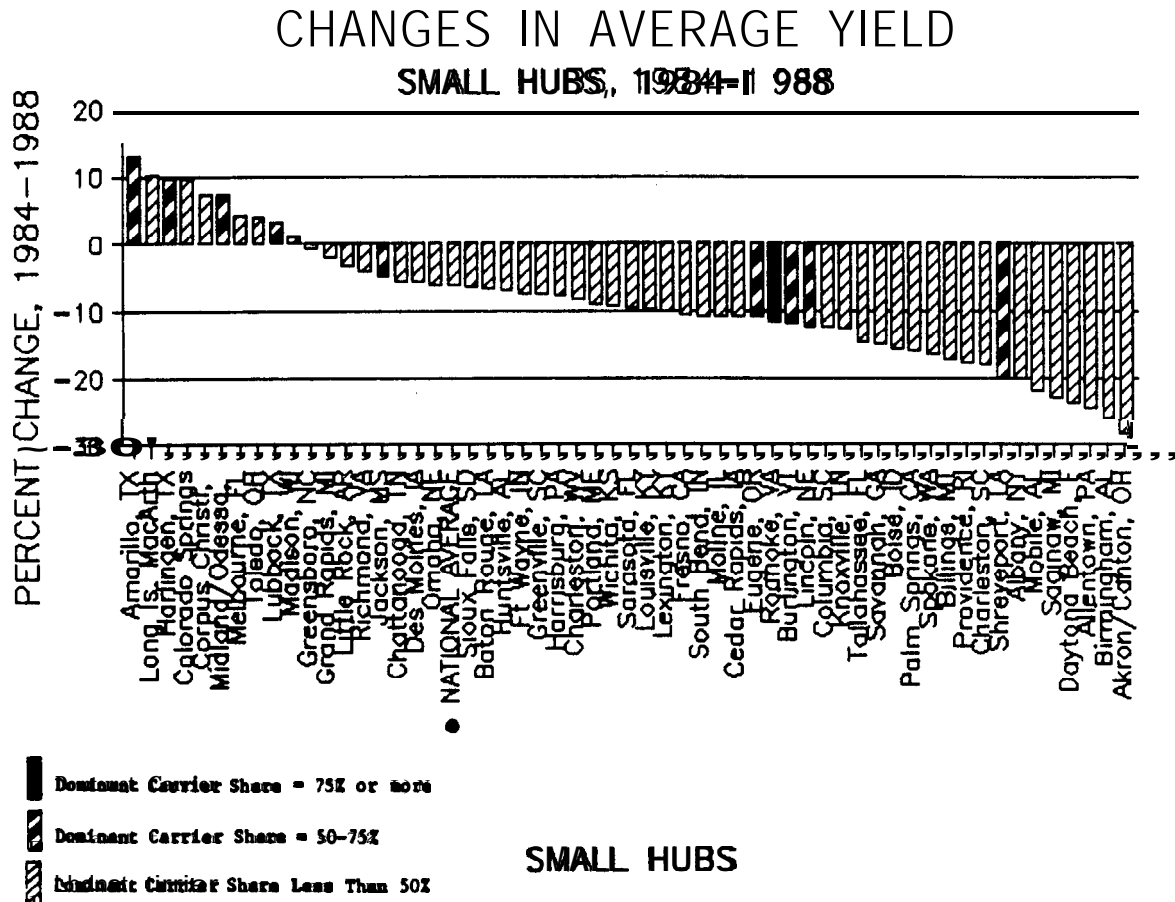
CHANGES IN AVERAGE YIELD
SMALL HUBS, 1984-1988

Dominant Carrier Share = 75% or more
Dominant Carrier Share = 50-75%
Dominant Carrier Share Less Than 50%

SMALL HUBS

CHANGES IN AVERAGE YIELD, SMALL HUBS, 1984-1988
(Hubs Arrayed in Descending Order by Percent Change)

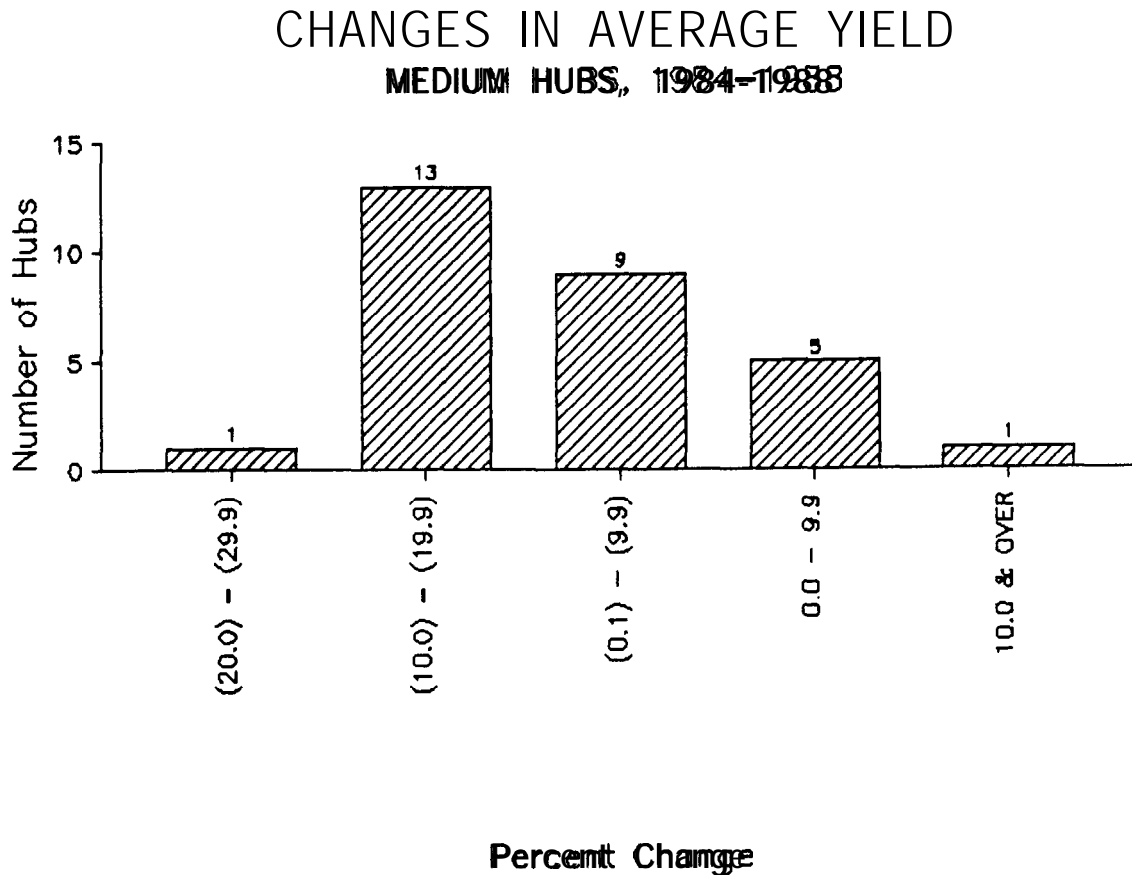| Small Hubs	Average Yield (cents) 1984	1988	Percent Change, 1984-1988
Amarillo, TX	16.0¢	18.1¢	13.1%
Long Island MacArthur, NY	12.9	14.2	10.1
Harlingen, TX	14.4	15.8	9.7
Colorado Springs, CO	13.6	14.9	9.6
Corpus Christi, TX	16.4	17.6	7.3
Midland/Odessa, TX	15.1	16.2	7.3
Melbourne, FL	14.2	14.8	4.2
Toledo, OH	17.3	18.0	4.0
Lubbock, TX	15.3	15.8	3.3
Madison, WI	18.0	18.2	1.1
Greensboro, NC	23.7	23.5	- 0.8
Grand Rapids, MI	18.9	18.5	- 2.1
Little Rock, AR	21.4	20.7	- 3.3
Richmond, VA	24.1	23.1	- 4.1
Jackson, MS	23.0	21.9	- 4.8
Chattanooga, TN	27.3	25.8	- 5.5
Des Moines, IA	18.0	17.0	- 5.6
National Average	16.0	15.0	- 6.2
Omaha, NE	17.6	16.5	- 6.2
Sioux Falls, SD	18.7	17.5	- 6.4
Baton Rouge, LA	21.0	19.6	- 6.7
Huntsville, AL	27.0	25.1	- 7.0
Ft. Wayne, IN	22.9	21.2	- 7.4
Greenville, SC	25.8	23.9	- 7.4
Harrisburg, PA	20.7	19.1	- 7.7
Charleston, WV	25.8	23.7	- 8.1
Portland, ME	16.7	15.2	- 9.0
Wichita, KS	19.8	18.0	- 9.1
Sarasota/Bradenton, FL	13.8	12.5	- 9.4
Louisville, KY	23.6	21.3	- 9.7
Lexington, KY	25.9	23.3	-10.0
Fresno, CA	18.2	16.3	-10.4
Cedar Rapids, IA	19.7	17.6	-10.7
Eugene, OR	15.9	14.2	-10.7
Moline, IL	20.5	18.3	-10.7
South Bend, IN	20.6	18.4	-10.7
Roanoke, VA	25.3	22.4	-11.5
Burlington, VT	16.3	14.4	-11.7
Lincoln, NE	17.9	15.7	-12.3
Columbia, SC	25.1	22.0	-12.4
Knoxville, TN	26.2	22.9	-12.6
Tallahassee, FL	27.3	23.3	-14.7
Savannah, GA	22.6	19.2	-15.0
Boise, ID	20.5	17.3	-15.6
Palm Springs, CA	15.6	13.1	-16.0
Spokane, WA	18.8	15.7	-16.5
Billings, MT	20.8	17.2	-17.3

CHANGES IN AVERAGE YIELD, SMALL HUBS, 1984-1988
(Hubs Arrayed in Descending Order by Percent Change)

| Large Hubs | Average Yield (cents) | | Percent Change, 1984-1988 |
	1984	1988	
Providence, RI	17.4¢	14.3¢	-17.8%
Charleston, SC	24.3	19.9	-18.1
Albany, NY	20.9	16.7	-20.1
Shreveport, LA	25.4	20.3	-20.1
Mobile, AL	25.1	19.6	-21.9
Saginaw/Bay City, MI	24.3	18.7	-23.0
Daytona Beach, FL	18.6	14.2	-23.7
Allentown, PA	22.1	16.7	-24.4
Birmingham, AL	27.0	20.0	-25.9
Akron/Canton, OH	21.5	15.4	-28.4

Source: Origin-Destination Survey of Airline Passenger Traffic - Domestic.

Average yields at the **56** small hubs in **1984** ranged from **12.9** cents per mile at Long Island MacArthur, **N.Y.,** to **27.3** cents per mile at Chattanooga, Tennessee and Tallahassee, Florida. In **1988,** average yields ranged from **12.5** cents per mile at **Sarasota/Bradenton,** Florida to **25.8** cents per mile at Chattanooga, Tennessee. The range between high and low yields narrowed slightly from **112** percent in **1984** to **106** percent in **1988.**

Table **II-49** and Chart II-Y show the distribution of yield changes at the small hubs. Forty-six of the **56** had decreases in yields. In terms of the national average decrease of **-6.2** percent, **17** small hubs were **above** the average and **39** were below.
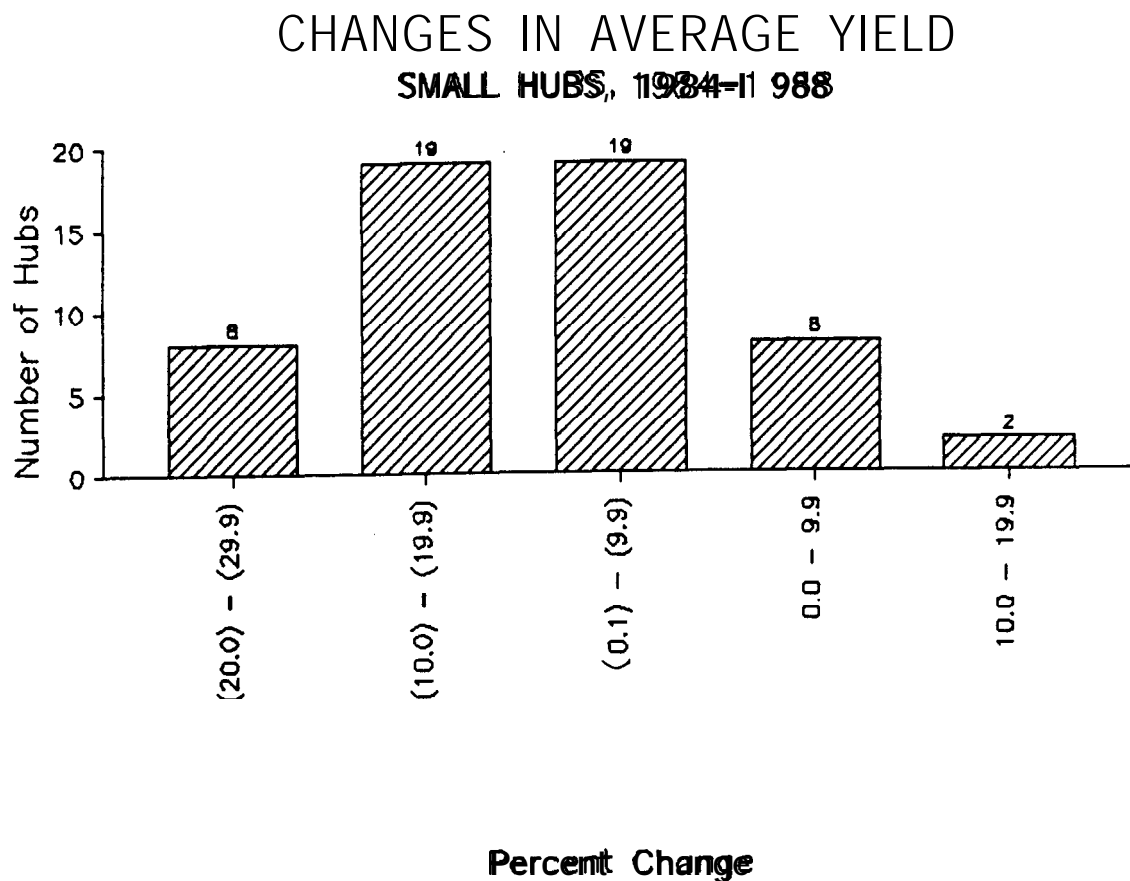
CHANGES IN AVERAGE YIELD
SMALL HUBS, 1984-1988

Percent Change

CHANGE IN AVERAGE YIELD, SMALL HUBS, 1984-1988

Percent Change, 1984-1988	Number of Small Hubs	Percent of Small Hubs
(20.0) - (29.9)	8	14.3
(10.0) - (19.9)	19	33.9
(0.1) - (9.9)	19	33.9
0.0 - 9.9	8	14.3
10.0 - 19.9	2	3.6
Total	56	100.0

CHANGES IN AVERAGE YIELDS, NONHUBS, 1984-1988

Tables II-50 and II-51

Changes in average yield at the **nonhubs** between **1984** and **1988** ranged from **177.6** percent at New Bedford, Massachusetts to a decrease of **41.5** percent at **Manistee,** Michigan.

The **nonhub** group contains **362** cities. These have not been arrayed as in the case of the hubs, but full data for each are shown in Appendix II-l. Table **II-50** lists the **21 nonhubs** with yield increases of **40** percent or more.

Average yields at the **362 nonhubs** in **1984** ranged from **12.7** cents per mile at Ft. **Huachuca,** Arizona to **46.0** cents per mile at **Moultrie/Thomasville,** Georgia. In **1988,** average yields ranged from **13.0** cents per mile at Jackson, Wyoming to **59.4** cents per mile at New Bedford, Massachusetts. The range between high and low yields increased from **262** percent in **1984** to **357** percent in **1988.**

Table **II-51** and Chart II-Z show the distribution of yield changes at the **nonhubs.** The modal group was the **-10.0** to **-19.9** percent group, which included **84** of the **362 nonhubs.** In terms of the national average decrease of **6.2** percent, **194** were above the average and **168** were below.

CHANGES IN AVERAGE YIELD
NONHUBS, 1984-1988
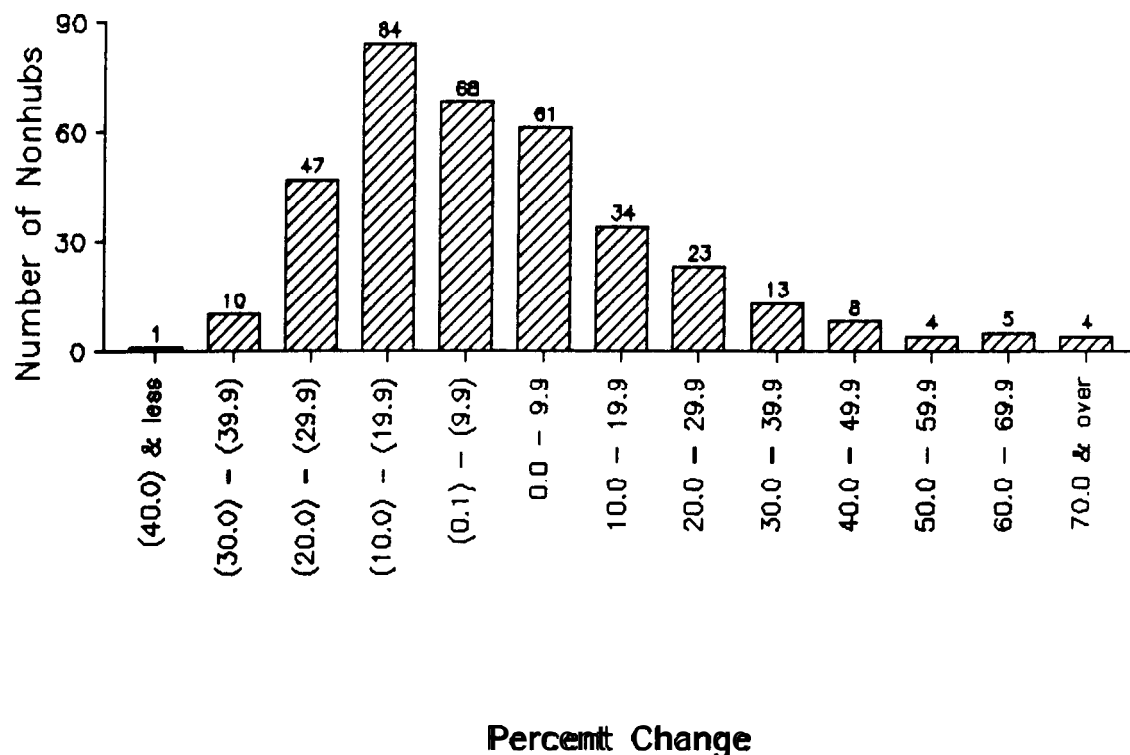
Percent Change

NONHUBS WITH INCREASES IN AVERAGE YIELDS
OF 40 PERCENT OR MORE, 1984-1988
(Arrayed in Descending Order by Percent Change)

City	Sample Passengers		Average Yield (cents)		Percent Change, 1979-1988
	1978	1988	1979	1988	
New Bedford, MA	9	204	21.4	59.4	177.6
Bar Harbor, ME	439	3,584	21.5	43.0	100.0
Visalia, CA	358	1,551	14.3	27.3	90.9
Rockland, ME	435	2,145	21.5	36.6	70.2
Augusta, ME	468	3,222	21.3	36.1	69.5
San Luis Obispo, CA	3,107	8,597	14.7	24.4	66.0
Hyannis, MA	4,104	4,166	20.1	32.5	61.7
Borrego Springs, CA	45	24	17.6	28.2	60.2
Moses Lake, WA	43	479	20.8	33.3	60.1
Pullman, WA	650	2,945	20.0	31.5	57.5
Nantucket, MA	1,874	4,418	20.8	32.6	56.7
Alliance, NE	18	41	29.5	45.1	52.9
Pendleton, OR	426	1,477	20.8	31.7	52.4
Santa Maria, CA	4,438	4,047	14.3	21.3	49.0
Lewiston, ID	1,070	3,428	20.7	30.8	48.8
Martha's Vineyard, MA	1,264	1,959	22.5	33.2	47.6
McAlester, OK	22	36	18.7	26.9	43.9
Provincetown, MA	887	703	21.8	31.3	43.6
North Bend, OR	506	1,571	21.5	30.8	43.3
Walla Walla, WA	701	2,672	19.0	27.1	42.6
Keene, NH	371	1,226	25.5	35.8	40.4

Source: Origin-Destination Survey of Airline Passenger Traffic -
Domestic.

CHANGE IN AVERAGE YIELD, NONHUBS, 1984-1988

Percent Change, 1984-1988	Number of Nonhubs	Percent of Nonhubs
(40.0) & over	1	0.3
(30.0) - (39.9)	10	2.8
(20.0) - (29.9)	47	13.0
(10.0) - (19.9)	84	23.2
(0.1) - (9.9)	68	18.8
0.0 - 9.9	61	16.9
10.0 - 19.9	34	9.4
20.0 - 29.9	23	6.4
30.0 - 39.9	13	3.6
40.0 - 49.9	8	2.2
50.0 - 59.9	4	1.1
60.0 - 69.9	5	1.4
70.0 & over	4	1.1
Total	362	100.0

* Percentages do not add to 100.0 due to rounding.

NUMBER AND PERCENT OF HUBS AND NONHUBS HAVING CHANGES IN
AVERAGE YIELDS BELOW AND ABOVE NATIONAL AVERAGE, 1984-1988

Table II-52

In the 1984-1988 period exactly half of the 474 cities
included in the analysis were below the national average of
-6.2 percent and half were above. Of the 27 large hubs, 13
were below the national average and 14 were above. Seventeen
medium hubs (59 percent) were below the average and 12 (41
percent) were above. Of the 56 small hubs, 39 (70 percent)
were below the average and 17 (30 percent) were above. Of
the 362 nonhubs, 168 (46 percent) were below the national
average and 194 (54 percent) were above.

NUMBER AND PERCENT OF HUBS AND NONHUBS HAVING CHANGES
IN AVERAGE YIELDS BELOW AND ABOVE NATIONAL AVERAGE
1984-1988

| | Number of Hubs -- | | Percent of Hubs -- | |
| | Below | Above | Below | Above |
Hub Class	Average	Average	Average	Average
Large	13	14	48	52
Medium	17	12	59	41
Small	39	17	70	30
Nonhub	168	194	46	54
Total	237	237	50	50

Source: Origin-Destination Survey of Airline Passenger Traffic -
Domestic.

PART III

THE RELATIONSHIP OF FARES TO
ENTRY AND EXIT OF COMPETITORS

In the structure part of this study the data revealed that a
larger proportion of passengers are moving in markets that have
three or more competitors than was true before hubbing prolifer-
ated. The data also show, however, that in large hub-to-large hub
markets nonstop competition is often limited to carriers that hub
at one or the other endpoint of the city-pair. In longer-haul
markets on-line connecting service accommodates a large percentage
of total passengers and based on the data observed in this section
of the study acts as a price discipline. In the markets of less
than 500 miles connecting service is rarely used and below 1,000
miles, on-line connecting competition generally does not account
for a large percentage of passengers and, therefore, may not be a
strong discipline on price.

The fact that non-hubbing carriers no longer offer non-stop
service in many large city-pair markets suggests that the non-stop
competitors in such markets will tend to be limited to carriers
that hub at either endpoint, and, therefore, define the likely
major competitors for extended periods of time. This raises the
question of whether price accommodation is more likely where the
same carriers compete directly over time.

Price vs. Entry and Exit

The connection between price competition and entry and exit was
tested by studying the relationship between changes in price, on
the one hand, and entry or exit of competitors, on the other, in a
large sample of dense markets. The data reveal strong tendencies
for price to drop when entry occurs and for price to increase
either when exit occurs or when the same carriers compete for more
than relatively short time spans. Moreover, there are instances
where hub-dominant carriers have not reacted to entry by non-
hubbing carriers or to on-line connecting entry.

The data also show that low-cost, low-fare carriers, which
generally were unable to survive discount pricing strategies of
their higher-cost competitors, had the most impact on fares.
Combined, these tendencies are evidence that a stable system of
competitors having similar cost characteristics may lead to higher
fares, at least in short-haul markets. To the extent the hubbing
system of operation has tended to exclude non-hubbing carriers
from large city-pair markets (particularly where such markets are
less than 1,000 miles), this results in such a more stable
competitive environment and suggests that there may be cause for
concern about the continued competitiveness of carriers in many
large city-pair markets.

Competition for Market Share as a Price Discipline

The data thus suggest that competition for share of market
following entry is the most effective discipline on price. From
this it appears that a continuous change in mix of competitors and
the resulting struggle for market share may be desirable. A key
question is to what extent can entry be anticipated to continue to
discipline price? Recent history suggests that entry that is new
to the system cannot be expected on a significant scale in the
current industry structure and competitive environment. The entry
that is most effectively disciplining price now in a number of
large city-pair markets is by smaller domestic carriers like
Midway, America West, Pan American and Southwest, who are trying
to expand their systems. Whether or not these carriers can
continue to expand into new markets is conjecture. Equally
important, even if they do, over time still more entry may be
necessary to discipline price.

Price Increases in Dense, Shorter-Haul Markets

Although the focus of this analysis is on the relationship between
price, on the one hand, and entry and exit, on the other, the data
also reveal that fares in large hub-to-large hub markets have
experienced large increases in recent years. Most comparisons
made in the service phase of the competition study and other areas
of the pricing phase of the study are based on 1979, 1984 and 1988
data. These data show, as discussed elsewhere, that 1988 fares
tend to be lower than 1984 fares. This particular price of the
pricing study, however, relies on a time series from 1982 through
1988. This shows that in a vast majority of short-to-medium
distance large hub-to-large hub city-pair markets, fares declined
subsequently to 1984 and then increased substantially. In these
very large city-pair markets, fares have, on average, increased by
more than 20 percent above the lower levels resulting from
competitive entry subsequent to 1984.

Analysis

The focus of this analysis is on large hub-to-large hub city pair
markets which generated 200 or more passengers per day during the
third quarter of 1988.

As indicated, the method used here is to observe what happens to
price when entry or exit occurs and when no entry or exit occurs.
We used third quarter data from 1982 through 1988, and generally
identified competitors as those carriers with 10 percent or more
of a city-pair market. A notable exception was for People Express
which clearly affected other carriers' prices with a much smaller
presence. Entry typically affected price at the time of entry.
Often, however, price decreases preceded the entry of low-cost,
low-fare carriers such as People Express and sometimes lagged
behind entry, particularly for some of the established carriers.

This analysis does not attempt to evaluate other factors which may affect price, or the reasonableness of the fare level in any market per se. This should not distort what the analysis shows. For example, it can be argued that price increases in 1987 and 1988 are the result of cost increases and an overall capacity shortage. (The Consumer Price Index increased by 8.2 percent over this two-year period.) Nevertheless, fares generally declined where entry occurred and, otherwise, increased. Where recent increases were modest in markets with no entry, fares tended to be high already relative to similar markets.

The following examples illustrate how the impact on fares of entry and exit is evaluated. The Dallas-Las Vegas market is an example of how nonstop competition has worked well and shows the effect on price of both entry and exit. As shown in Table III-5.2 (page 3), price dropped in 1984 when Braniff entered and again in 1986 when Jet America entered. Price rose in 1988 after Jet America had exited the market.

Lack of entry and exit, or stability in terms of changes in competitors also affects price. The Dallas-Phoenix market is a good example of this. As shown in Table III-4.2 (page 1), price dropped by 30 percent when Braniff entered in 1984, then, after being competed down in 1985, price rose during each of the next three years as the same three carriers competed with one another. The experience was the same in the Dallas-Chicago market (Table III-5.2, page 1) where fares dropped following entry in 1983 and 1984, but have increased since with the same five carriers competing. While the Dallas-Chicago increase was not great in 1988, the average fare in the market in 1988 was 23 percent above fares in similar markets (Table III-5.1).

The analysis of service in the structure part of the study suggested that very little non-hubbing competition exists at highly concentrated hubs. We have reviewed the fare-entry/exit relationship not only at concentrated hubs, but at relatively unconcentrated hubs and two-carrier hubs as well. Even at two-carrier hubs entry appears no more likely than at hubs dominated by a single carrier, perhaps because the entrant would have to compete with two carriers rather than one. Also, price tends to escalate in the absence of entry despite the presence of an additional hubbing carrier.

Highly Concentrated hubs

Salt Lake City (Tables III-1.1 and 1.2) -- Fares in the various Salt Lake City markets tended to increase by relatively large increments until either 1984, when Continental entered several as a low-fare carrier (between SLC and CHI, DEN, and SFO) or 1985, when America West entered several, also as a low-fare carrier (between SLC and LAS, LAX, PHX, SAN, and SFO). Fares then dropped sharply and continued down for a year or two as carriers competed for market share. Subsequently, as the mix of carriers remained stable, fares started moving back up in every Salt Lake City market. In most cases the increases have been very substantial.

The pattern of fare changes in Salt Lake City markets is very closely related to the pattern of entry and exit. In the markets examined, virtually all large fare changes were in response to entry and exit of competitors. Of 32 changes of 10 percent or more, 30 coincided with entry and exit of competitors.

Five of the nine Salt Lake City markets did not experience entry during either 1987 or 1988 and in each case average fares increased considerably. Four of the markets experienced entry, and fares decreased in two and increased in two. The fares increased in the Salt Lake City-Chicago market where the three hubbing carriers chose to increase their fares for single-plane service despite low-fare connecting service introduced by Continental, and in the Salt Lake City-Denver market, where Continental entered with single-plane service but with fares at the increased level charged by the other hubbing carriers, in the absence of non-hub carrier competition.

Comparing 1988 fares with 1984 fares shows that 1988 fares are lower in 7 of the 9 Salt Lake City markets. Nevertheless, in 8 of 9 markets, competition drove prices down subsequent to 1984 and in those markets 1988 fares were now higher by an average of 34 percent. Fares in these same 8 city-pair markets are well above the average fares in large hub-to-large hub markets of the same distance.

St. Louis (Tables III-2.1 and 2.2) -- The overall fare experience at St. Louis has generally been similar to that at Salt Lake City but there have been differences. Unlike Salt Lake City, fares at St. Louis often decreased from 1982 to 1984, apparently reflecting a share-of-market struggle between TWA and Ozark. Fares subsequently began to increase until entry occurred by a number of different carriers. As at Salt Lake City, however, after initially dropping at the time entry occurred, fares have steadily increased in most markets where still more entry has not occurred.

The pattern of fare changes in St. Louis markets is also closely related to the pattern of entry and exit. Of 54 changes of 10 percent or more, 38 coincided with entry and exit of carriers. Most of the remaining 16 changes were reductions reflecting share of market competition between Trans World and Ozark in the early to mid 80's, before Trans World acquired Ozark.

Entry occurred during 1987 or 1988 in five of the 17 St. Louis markets, and fares decreased in three, increased in one and remained unchanged in one. Fares increased in seven of the 12 markets where entry did not occur during the last two years. Fares declined slightly in 5 markets where entry did not occur during the last two years, apparently led by an attempt by TWA to further solidify its dominant position at St. Louis.

Comparing 1988 fares with 1984 fares shows that 1988 fares are lower in 12 of the 17 markets. However, post 1984 fares dropped in 15 of the 17 markets, and in each instance 1988 fares are higher by an average of 22 percent. Fares in 11 of these 15 city-pair markets exceed the average fares in large hub-to-hub markets of the same distance.

Charlotte (Tables III-3.1 and 3.2) -- The early picture at Charlotte was not controlled by entry, but by the competitive struggle between Eastern, which dominated Charlotte in the early 80's, and Piedmont, which was building its system around Charlotte as its connecting hub. After Piedmont prevailed, and in the absence of entry, however, fares in all Charlotte markets have increased in recent years.

Here again, the pattern of fare changes is closely related to the pattern of entry and exit. Of 22 changes in price of 10 percent or more, 17 coincided with entry and exit. Five reductions in price of greater than 10 percent occurred in 1984 and 1985, as Eastern and Piedmont competed for dominance at Charlotte.

Average fare increased from 1987 and 1988 in all seven Charlotte markets. The only entry in 1987 and 1988 was by Pan American with a single round trip flight between Charlotte and Miami, to which Piedmont did not respond in view of its very dominant share of that market.

Comparing 1988 fares with 1984 fares shows that 1988 fares are lower in all 8 markets. However, in each case, competition drove prices down subsequent to 1984; in 1988 fares are now higher by an average of 27 percent. Fares at all but one of the Charlotte city-pair markets exceed the average fares at large hub-to-large hub markets of the same distance.

Less Concentrated Hubs (Tables III-4.1 and 4.2)

The phenomenon of price increases in the absence of entry is not limited to highly concentrated hubs that are dominated by a single carrier. Phoenix, for example, is not highly concentrated, although it is a connecting hub for America West, and another low-cost carrier, Southwest, has a substantial presence there. Although entry and the resulting competitive struggle brought fares down in most Phoenix markets in the mid 80's, in the absence of still more entry fares have since risen in all Phoenix markets, except St. Louis-Phoenix where TWA is apparently competing hard for market share. In several markets the increases have been quite large.

Once again the pattern of fare changes is closely related to the pattern of entry and exit.. Of 32 changes in prices of 10 percent or more,, 25 coincided with entry and exit.. Entry occurred in only four markets in 1987 and 1988 and three of the four were by hubbing carriers in city pairs where non-hub competition no longer exists.. These carriers did not elect to compete on price for market share but relied on their hub presence instead..

Comparing 1988 fares with 1984 fares shows that 1988 fares are lower in seven of the 12 markets.. In all 12 markets,, however,, competition drove prices down subsequent to 1984 and in each case 1988 fares are now higher by an average of 23 percent.. At the same time, fares in seven of the 12 markets continue to be lower than the average fares in large hub-to-large hub markets of the same distance..

Two Carrier Hubs ((Tables III-S.1 and 5.2))

Even hubs dominated by two carriers show the same tendencies.. In the early 80's in Dallas markets where entry did not occur fares generally increased substantially ((between DFW and DEN,, MCI,, LAS,, MSP,, STL,, and SLC)).. Where entry occurred,, fares decreased,, often dramatically ((between DFW and CHI,, DTW,, DCA)).. In Dallas markets where the same carriers have competed for several years prices have tended to increase,, sometimes by large amounts.. Even in the Dallas-Chicago market,, where five carriers have competed since 1984,, prices have tended up..

Thirty-eight of 46 instances of price changes of 10 percent or more coincide with entry and exit of competitors.. In 8 of 9 markets where entry did not occur in 1987 and 1988,, 1988 fares increased by an average of 15 percent over 1987 fares.. Conversely,, fares were reduced by an average of 9 percent in seven markets where entry led to reductions. In three of the four markets where entry occurred and prices did not drop,, the entry was on-line connecting service.. Hubbing carriers offering 7 to 10 nonstop round trips in those markets chose not to price compete..

Comparing 1988 with 1984 shows that 1988 fares are lower in 10 markets and higher in 10 markets.. However,, in 18 of the 20 markets competition drove prices down subsequent to 1984,, and in each of these markets 1988 fares are now higher by an average of almost 20 percent.. Fares in 15 of the 18 city-pair markets are lower than the average fares in large hub-to-large hub markets of the same distances..

Competition in Longer-Haul City-Pair Markets

In the shorter-haul city-pair markets, competitors were identified as those carriers having a 10 percent or greater share of total traffic in the market. This same standard cannot be used in longer-haul markets.

Generally, in longer-haul markets carriers with 10 percent or more of the traffic operate single-plane service. Entry and exit of single-plane carrier tends to happen with much less frequency in longer-haul markets. The entry does occur, however, in the form of new on-line connecting services as carriers develop new connecting hub complexes at intermediate points.

On-line connecting services often account for 40 percent or more of the total traffic, but are spread among several carriers such that no one carrier accounts for even five percent of the total traffic. None of these carriers individually would be considered a competitor using the 10 percent standard. Collectively, however, it is clear that, in the past, they have disciplined the price of single-plane carriers. The question addressed here is whether the disciplining effect of on-line connecting services has continued as the hub-and-spoke system of operation has matured.

Our review of longer haul, large hub-to-large hub city-pair markets shows that, as a general proposition, fare changes in longer-haul markets do not suggest that these markets are becoming less competitive. Despite the absence of entry, as measured by a carrier attaining a 10 percent or greater share of market, price changes are not out of line with overall industry trends, which is evidence that on-line connecting services are continuing to discipline single-plane fares.

One apparent trend in large hub-to-large hub markets is that single-plane fares are increasing relative to connecting fares. This reverses the trend that occurred during the early stages of the development of the hubbing system. At the same time, however, as single-plane carriers increase their fares relative to connecting service of other carriers, they also tend to lose share of market to the connecting carriers. This, and the fact that average fares in city-pairs with significant amounts of connecting service are increasing at a pace consistent with cost increases, are evidence that on-line connecting services are continuing to discipline prices in longer-haul city-pair markets.

Table III 1.1

Salt Lake City Markets
Selected Fare Comparisons

	Percent Change			88 Actual vs 88 Average	Entry
	88 vs 87	88 vs 86	88 vs Post 84 Low (Year)		
Chicago	3	5	5 (86)	28	(CO) 1/
Denver	8	52	69 (AA)	7	(CO) 2/
Dallas	(3)	13	13 (86)	26	(CO/UA) 3/
Las Vegas	100	62	100 (87)	9	X
Los Angeles	22	10	22 (87)	39	X
Minneapolis	(17)	(8)	--	(7)	(PA) 4/
Phoenix	40	42	42 (86)	13	X
San Diego	13	2	13 (87)	28	X
San Francisco	8	(5)	8 (87)	37	X

* The average is based on a straight-line regression for large hub-to-large hub city-pair markets.

1/ On-line connecting service. Three hubbing carriers provided 11 non-stop round trips.

2/ Joining two other hubbing carriers.

3/ On-line connecting service.

4/ Non-stop service.

SOURCE: Table III 1.2

Salt Lake City Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982-1988

Salt Lake City-Chicago

3rd Qtr.	Average Fare	DL/WA	AA	UA	CO
88	$183.19	$189.28(28)	$197.08(10)	$190.70(24)	$133.95(18)
87	178.33	176.77(29)	154.31(9)	180.83(29)	151.44(11)
86	175.07	192.42(20)	156.01(8)	163.40(35)	
85	178.54	210.08(14)	140.43(12)	190.91(24)	148.21(20)
84	160.45	167.57(9)	152.20(13)	154.53(52)	155.11(6)
83	212.34	211.10(15)	204.18(14)	205.68(45)	
82	203.60	182.96(6)	175.07(18)	207.72(40)	188.17(8)

Hubbing carriers increased fares despite CO low-fare entry in the form of on-line connecting services.

Hubbers still competing at a CO induced fare after UA reduces fare to regain lost market share.

Two hubbing carriers increase price despite non-hubber's (CO) low fare.

CO low-fare entry — Reduction
CO exit — Increase

Salt Lake City-Denver

3rd Qtr.	Average Fare	DL/WA	UA	FL	CO	TI
88	$87.96	$83.43(30)	$92.38(17)		$83.97(36)	
87	81.65	81.90(25)	81.42(15)		77.04(38)	
86	57.74	58.12(35)	58.03(24)	$51.57(7)		
85	52.11	50.32(15)	50.25(11)	49.78(21)	50.18(26)	
84	58.64	59.04(11)	60.03(11)	56.70(23)	58.51(23)	
83	83.60	82.92(30)	79.74(17)	89.59(21)		
82	58.85	61.65(17)	54.50(10)	56.40(14)	56.10(7)	$58.60(11)

FL exit/CO entry — CO did not enter as low-fare carrier allowing price increase.
CO exit — Increase
Continued reduction in reaction to CO.
CO low-fare entry — Reduction
TI & CO exit — Increase

Table III-1.2
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Salt Lake City Markets
Comparison Of Average Fares with Entry/Exit of Competitors
1982-1988

Salt Lake City-Dallas

3rd Qtr.	Average Fare	AA	DL	WA	CO	FL	UA	
88	$158.13	$162.57(14)	$142.59(36)		$129.05(29)		$126.22(14)	Reduction as AA reacts to continued low fares of CO & UA entry.
87	163.86	178.77(21)	179.17(35)		116.90(23)			WA/FL co-entry — Increase as hubbing carriers (AA/DL) push fares much higher despite CO low-fare entry.
86	139.56	131.70(30)	137.78(7)	$154.20(26)		$109.99(6)		
85	141.02	122.57(30)	121.09(6)	139.01(19)		158.15(20)		Reduction as hub carriers react to FL.
84	169.26	165.42(30)	170.69(7)	170.08(18)		162.61(11)		FL entry — competitive reaction not immediate but fares drop sharply later.
83	160.99	150.31(42)	164.01(15)	160.92(25)				Price escalates as same three carriers compete.
82	116.11	109.16(53)	102.85(11)	116.64(19)				

Salt Lake City-Las Vegas

3rd Qtr.	Average Fare	DL/WA	HP	OZ	
88	$ 89.14	$ 95.92(32)	$ 85.17(63)		Reduction.
87	44.53	55.54(21)	41.09(75)		
86	54.93	65.68(33)	48.23(64)	$78.44(10)	OZ entry/market share competition between DL/WA-HP — Reduction.
85	112.50	112.85(93)	106.87(7)		HP entry — Reduction
84	129.29	129.60(90)			Fares escalate in the absence of entry.
83	119.66	119.38(98)			Fares escalate in the absence of entry.
82	95.25	94.19(92)			Fares escalate in the absence of entry.

Salt Lake City Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982-1988

Salt Lake City-Los Angeles

3rd Qtr.	Average Fare	DL/WA	HP	PS	RC	
88	$134.92	$138.09(57)	$128.10(36)			Accommodation after DL/WA-HP competitive struggle.
87	110.77	121.32(50)	86.94(23)			
86	122.45	139.30(58)	90.55(35)			
85	140.16	142.52(81)	120.56(11)			HP enters — Reduction
84	152.99	153.90(85)				
83	130.09	129.32(76)				PS-RC exit — Increase
82	91.28	90.95(54)		$85.27(17)	$91.47(22)	

Salt Lake City-Minneapolis

3rd Qtr.	Average Fare	DL/WA	NW/RC	CO	PA	
88	$116.91	$117.39(40)	$118.18(21)		$93.16(19)	PA entry — Reduction
87	141.21	132.57(57)	132.42(23)			Accommodation — Large Increase
86	126.45	123.83(61)	119.78(15)			CO exit — Increase
85	120.49	116.27(52)	127.98(12)	$104.15(9)		
84	148.69	141.07(38)	146.50(21)	138.66(21)		CO entry — Reduction
83	169.23	153.57(62)	182.35(17)			CO exit — Reduction as remaining carriers continue to compete at CO induced fare level.
82	181.94	187.74(43)	180.66(12)	141.23(11)		

Table III-1.2
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Salt Lake City Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982-1988

Salt Lake City-Phoenix

3rd Qtr.	Average Fare	DL/WA	HP	RC	
88	$102.86	$112.55(33)	$96.37(64)		Accommodation — Increase
87	73.63	76.69(38)	69.80(52)		
86	72.28	73.38(43)	69.43(45)		DL/WA-HP compete for share of market — Reduction.
85	86.77	87.24(52)	84.85(45)		HP entry — Reduction
84	123.60	126.28(63)			RC exit — Increase
83	112.56	110.41(76)		$118.26(111)	
82	105.58	111.35(38)		101.92(51)	

Salt Lake City-San Diego

3rd Qtr.	Average Fare	DL/WA	HP	al	PS	
88	$127.58	$135.59(48)	$115.16(44)			Accommodation — Increase
87	112.95	125.42(53)	87.64(39)			
86	124.81	131.89(61)	109.84(31)			DL/WA-HP compete for market share — Reduction.
85	135.20	153.78(79)	120.50(10)			HP entry — Reduction
84	152.29	138.79(94)		$136.96(12)		CO entry — DL/WA very dominant and does not react.
83	139.61					PS exit — Increase
82	92.79	91.30(53)			$90.42(32)	

Salt Lake City Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982-1988

Salt Lake City-San Francisco

3rd Qtr.	Average Fare F	DL/WA	UA	HP	PS	RC	
88	$133.53	$136.17(52)	$133.90(21)	$114.32(20)			Accommodation
87	123.71	134.45(50)	131.36(23)	77.05(20)			Three-way competition for market share — Reduction
86	139.89	142.53(45)	144.00(30)	90.81(10)			HP entry — Reduction
85	144.51	141.95(53)	145.24(31)				RC exit — price reduction as DL/WA-UA continue to compete at RC induced levels.
84	154.40	153.82(48)	154.06(26)			$143.63(12)	
83	128.10	126.03(53)	125.31(24)			128.11(5)	PS exit — Increase
82	89.10	86.22(42)	90.94(18)		$85.29(22)		

Table III-2.1

St. Louis Markets
Selected Fare Comparisons

| | Percent Change | | | 88 Actual vs | |
	88 vs 87	88 vs 86	88 vs Post 84 Low (Year)	88 Average*	Entry
Atlanta	(5)	10	10 (86)	10	X
Boston	3	9	9 (86)	8	X
Chicago	(14)	(3)	13 (85)	(34)	X
Denver	--	38	38 (86)	23	(CO) 1/
Dallas	(4)	14	18 (85)	25	(CO/BN)
Detroit	(7)	(38)	--	(31)	(WN)
Houston	(1)	2	13 (85)	(22)	(CO) 1/
Kansas City	8	35	101 (85)	21	(BN)
Miami	2	2	2 (87)	1	X
Minneapolis	5	17	2 (85)	17	X
Newark	--	26	50 (85)	16	X
New York	==	53	53 (86)	45	X
Orlando	10	1	10 (87)	3	X
Philadelphia	(6)	(4)	--	9	X
Phoenix	(9)	9	9 (86)	(11)	X
Seattle	11	24	24 (86)	==	X
Washington	(2)	2	2 (86)	7	X

* The average is based on a straight-line regression for large hub-to-large hub city-pair markets.

1/ Joining other hub carriers.

SOURCE: Table III-2.2

St. Louis Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

St. Louis-Atlanta

3rd Qtr	Average Fare	DL	EA	TW	OZ	
88	$ 98.69	$103.54(36)	$ 96.62(22)	$ 93.41(34)		Three-way competition for share of market
87	104.02	104.04(39)	106.93(26)	101.24(30)		OZ exit--Increase.
86	99.55	95.09(38)	88.60(21)	98.81(5)	$ 81.89(22)	
85	102.06	102.64(32)	105.27(17)	76.10(11)	86.88(23)	TW entry--Reduction
84		132.42(37)	132.80(33)		127.66(16)	
83	126.42	124.89(37)	127.37(28)		122.18(17)	
82	122.04	118.93(24)	121.59(45)		113.91(10)	Price escalates until TW enters.

St. Louis-Boston

3rd Qtr	Average Fare	TW	PE	
88	$139.22	$134.52(84)		
87	135.27	124.92(77)		PE exits--Increase
86	127.28	116.41(54)	$119.32(11)	PE enters--Reduction
85	139.13	137.91(57)		Held to BOS-MCI fare lowered as a result of low-fare entry by ML.
84	189.42	185.65(58)		
83	165.69	158.19(78)		
82	175.86	173.84(80)		

St. Louis-Chicago

3rd Qtr	Average Fare	AA	TW	UA	OZ	WN	ML	
88	$ 48.66	$ 44.30(10)	$ 42.98(33)	$ 46.38(10)		$ 52.23(43)		Average fare decreases as TW trys to regain lost market share.
87	56.71	43.65(4)	64.30(43)	50.24(11)		48.27(38)		OZ exit--Increase.
86	50.22	44.81(6)	57.60(8)	45.48(13)	$ 57.52(26)	42.08(32)		Price escalates as hubbing carriers increase fares.
85	41.75	39.13(5)	45.03(10)	41.27(9)	41.50(36)	39.74(24)		UN entry--Reduction
84	77.00	75.36(6)	76.31(11)	76.62(13)	77.03(53)			ML exit--Increase
83	63.82	65.69(10)	67.47(19)	59.65(5)	64.00(30)		$ 52.50(16)	UA entry--Reduction
82	69.50	72.53(9)	74.07(16)		70.62(36)		58.17(22)	

Table III-2.2
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St. Louis **Markets**
Comparison of **Average** Fares with **Entry/Exit** of Competitors
1982 - 1988

St. Louis-Denver

3rd Qtr	Average Pare	TW	UA	CO	FL	OZ	
88	$135.95	$136.50(50)	$142.51(20)	$117.05(20)			CO entry (not low fare), **FL/OZ** exit--Increase
87	135.51	132.00(45)	133.32(25)	130.79(20)			Price **drops** with **FL's** last stand.
86	98.61	103.35(31)	96.80(26)		s 90.85(7)	s 85.54(11)	
85	108.18	102.73(20)	101.10(10)		104.68(22)	107.70(20)	**Four-way** competition for
84	116.43	122.52(18)	121.74(9)		112.70(17)	104.91(33)	**market** share until **FL/OZ** exit.
83	115.55	113.65(33)	113.29(8)		126.40(11)	104.38(29)	**UA** enters--Reduction
82	134.01	136.65(27)			135.78(20)	118.53(36)	

St. Louis-Dallas

3rd Qtr	Average Pare	AA	TW/OZ	CO	BN	SI	
88	$118.05	$125.25(14)	$114.06(32)	S 95.06(17)	$136.06(10)		**SI exit; CO,BN** entry--Reduction.
87	122.61	133.57(27)	129.49(35)			95.62(27)	Increase as **hubbing** carriers increase price **and** gain market share.
86	103.45	129.11(10)	113.34(15)			90.00(54)	
85	100.14	122.42(17)	117.24(18)			81.88(42)	
84	104.67	103.34(33)	113.85(30)			86.55(15)	**SI** entry--Reduction
83	115.43	127.21(24)	114.18(55)				
82	107.19	118.04(32)	95.65(56)				

St. Louis-Detroit

3rd Qtr	Average Fare	TW	OZ	NW/RC	UN	
88	$ 59.30	$ 62.55(45)		S 46.40(27)	$ 63.32(22)	Hub carriers continue to react to UN--Reduction.
87	63.88	73.08(37)		60.63(14)	52.87(40)	**WN** entry--Reduction
86	95.81	97.71(27)	$101.03(28)	91.58(26)		
85	84.10	79.97(29)	91.78(24)	82.82(28)		**NW/RC** entry--Reduction
84	117.51	115.89(55)	120.29(29)			
83	114.16	117.09(52)	110.80(25)			**Modest** price changes as **TW/OZ** complete.
82	122.15	122.06(50)	125.45(31)			

St. Louis Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

St. Louis-Houston

3rd Qtr	Average Fare	TW	OZ	WN	CO
88	s 81.13	$ 74.35(50)		$ 94.94(28)	$ 76.14(13)
87	81.92	79.76(55)		84.50(23)	75.47(13)
86	79.46	91.32(30)	$ 70.83(31)	72.49(31)	
85	71.86	80.44(18)	68.30(33)	66.96(39)	
84	119.31	128.66(30)	111.24(57)		
83	120.79	113.55(30)	123.53(57)		
82	97.21	91.10(17)	88.34(59)		

OZ exit/CO entry--Little change.

WN entry--Reduction

TI
$118.00(14)

TI exit--Increase

St. Louis-Kansas City

3rd Qtr	Average Fare	TW	OZ	AL	BN
88	$ 87.30	$ 93.94(63)			S 66.92(23)
87	80.86	86.22(55)		s 75.49(22)	
86	64.55	71.81(36)	$ 60.62(25)	52.83(11)	
85	43.53	46.56(34)	40.94(44)		
84	64.20	63.15(41)	64.95(35)		
83	57.82	58.59(37)	56.26(44)		
82	84.60	93.17(23)	80.96(58)		

BN entry--Average fart increases as TW's fart
increase (63% share) offsets BN's low fare.
OZ exit--Increase
Hubbing carriers increase fares despite AL entry
OZ's final attempt to regain Share.

TW/OZ Compete for share.

St. Louis-Miami

3rd Qtr	Average Fare	TW	EA	OZ
88	$132.13	$138.06(59)	$116.19(31)	
87	129.26	128.81(70)	114.07(17)	
86	129.77	130.27(15)	121.68(17)	$127.06(40)
85	150.88	160.31(11)	144.86(24)	150.10(39)
84	168.88	168.01(21)	164.17(18)	162.22(42)
83	172.41	175.44(20)	168.53(15)	166.38(40)
82	163.46	159.14(26)	156.95(29)	165.69(29)

Fares stabilized after OZ exit and have started back up.

Three-way competition for market Share, apparently led by
OZ, brought fares down.

Table III-2.2
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St. Louis Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

St. Louis-Minneapolis

3rd Qtr	Average Fare	NW	RC	TW	OZ	
88	$ 92.26	$ 92.17(44)		$ 90.78(53)		
87	87.53	85.39(38)		88.03(59)		RC/OZ exit--Increase
86	78.88	75.92(18)	s 70.74(34)	92.61(9)	$ 68.65(22)	
85	86.54	87.25(17)	83.42(16)	77.59(9)	85.46(33)	TW entry--Decrease
84	129.69	126.30(20)	123.71(14)		129.53(43)	RC entry--Increase
83	112.06	110.63(23)			108.93(58)	
82	112.72	105.95(26)			113.79(57)	

St. Louis-Newark

3rd Qtr	Average Fare	TW	PE	
88	$145.04	$145.42(89)		PE exit--Increase
87	DATA PROBLEM			
86	114.71	117.52(70)	$ 98.80(17)	
85	96.40	131.62(48)	49.00(44)	PE entry-Decrease
84	144.71	141.92(75)		
83	136.17	135.31(91)		
82	171.00	170.62(88)		

St. Louis-New York

3rd Qtr	Average Fare	TW	OZ	
88	$181.39	$195.71(55)		PE exit at EWR
87	DATA PROBLEM			
86	118.30	170.46(15)	$ 88.44(53)	Reduction related to PE at EWR.
85	134.71	162.91(20)	125.43(38)	
84	132.72	126.51(67)	134.88(12)	
83	154.48	182.85(2)	142.34(44)	TW and OZ competing for market share.
82	186.29	198.69(13)	175.34(32)	

Table III-2.2
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St. Louis Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

St. Louis-Orlando

3rd Qtr	Average Fare	TW	OZ	EA	DL	
88	$120.91	$122.71(63)		$109.12(21)		Accommodation
87	110.05	109.75(62)		106.88(10)		OZ exits--Reduction as TW/EA compete for share.
86	120.43	129.45(9)	$120.26(58)	101.24(16)		DL exits--Reduction as remaining carriers compete at DL induced fares.
85	128.29	117.23(9)	145.61(47)	103.52(10)	$100.43(11)	DL enters-Reduction
84	156.97	146.92(15)	164.08(55)	124.31(13)		}
83	146.69	144.74(33)	157.42(39)	123.99(11)		)Fares escalate with same competitors.
82	140.21	146.71(8)	141.16(57)	123.77(19)		}

St. Louis-Philadelphia

3rd Qtr	Average Fare	TW	OZ
88	$131.83	$129.71(83)	
87	140.12	137.06(81)	
86	137.73	189.92(59)	$125.02(18)
85	143.41	148.89(55)	135.42(13)
84	160.89	161.51(65)	157.18(15)
83	121.25	117.36(65)	111.53(15)
82	164.47	157.12(58)	170.03(22)

St. Louis-Phoenix

3rd Qtr	Average Fare	TW	WN	FL	RC	
88	$127.90	$110.60(58)	$156.66(32)			Reduction as TW competes for market share.
87	140.12	153.84(39)	125.49(53)			
86	117.14	140.75(33)	92.38(47)			WN entry--Reduction
85	161.52	160.74(30)		$164.50(16)	$152.49(12)	FL/RC entry--Reduction
84	188.01	193.59(67)				
83	166.21	161.91(86)				
82	191.06	182.91(72)				

St. Louis Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

St. Louis-Seattle

3rd Qtr	Average Pare	TW	UA	WA	EA	
88	$175.62	$166.04(70)	$183.98(8)			
87	158.33	158.03(59)	156.03(9)			WA exit--Increase
86	142.18	156.47(37)	126.35(17)	$116.19(11)		
85	186.09	185.10(36)	163.76(10)	197.43(11)		UA/WA entry--Reduction
84	228.29	210.45(63)				
83	198.38	189.57(66)				
82	209.28	205.98(119)			$195.74(50)	

St. Louis-Washington

3rd Qtr	Average Pare	TW	OZ	
88	$113.81	$111.64(69)		Reduction as on-lint connecting market share **trippled** to **28** percent.
87	116.08	114.84(86)		**OZ** exits--Increase
86	111.91	111.25(55)	$104.78(21)	
85	122.28	118.28(43)	133.27(20)	
84	117.29	114.29(60)	110.94(17)	
83	115.55	113.25(68)	111.74(11)	**Reduce to MCI-WAS level where ML** entry brought **fare down.**
82	151.33	150.92(50)	157.00(26)	

SOURCE: Origin-Destination Survey of Airline passenger Traffic,
Data Bank Iv filtered.

Table III-3.1

Charlotte Markets
Selected Fare Comparisons

	Percent Change				88 Actual vs 88 Average*	Entry
	88 vs 87	88 vs 86	88 vs Post 84 Low	(Year)		
Chicago	33	21	33	(87)	28	X
Dallas	15	11	15	(87)	22	X
Detroit	17	24	57	(86)	8	X
Miami	5	3	12	(85)	3	(PA)
Newark	==	15	40	(85)	(3)	X
Philadelphia	17	19	19	(86)	22	X
Washington	15	3	15	(87)	14	X

* The average is based on a straight-line regression for large hub-to-large hub city-pair markets.

SOURCE: Table III 3.2

Charlotte Markets
Comparison of Average Pares with Entry/Exit of Competitors
1982 - 1988

Charlotte-Chicago

3rd Qtr	Average Bare	PI	UA	EA
88	$125.08	$122.09(76)	$129.92(12)	
87	93.81	85.75(72)	107.97(10)	
86	103.70	99.11(52)	108.28(10)	s 97.17(12)
85	112.82	110.73(41)	109.89(13)	105.77(15)
84	131.15	122.58(42)	140.31(20)	123.81(20)
83	129.98	124.51(41)	136.32(18)	121.69(22)
82	101.24	95.07(38)	99.47(9)	99.42(34)

Increase as PI achieves dominance.
EA exit--Reduction as PI strives for dominant share.

Charlotte-Dallas

3rd Qtr	Average Pare	PI	AA	DL	EA	
88	$148.10	$149.59(53)	$159.57(20)	$125.35(11)	$124.76(8)	Accommodation
87	128.82	117.82(48)	145.91(21)	115.69(15)	112.07(7)	DL/EA enter--Reduction
86	132.94	122.27(54)	153.91(20)			
85	147.92	139.25(36)	148.03(37)			AA enters--Reduction
84	163.02	160.49(53)		166.98(7)	156.19(9)	
83	159.20	152.08(72)		166.62(7)	150.21(7)	
82	171.46	168.67(62)		163.79(9)	149.09(14)	

Charlotte-Detroit

3rd Qtr	Average Pare	PI	EA	AL	DL	
88	$ 98.18	$ 98.18(82)	$ 89.78(8)			AL exit--Increase
87	84.20	80.59(58)	83.70(6)	$ 92.08(19)		
86	79.47	75.32(59)	84.30(21)	91.22(6)		
85	98.47	99.10(52)	100.06(20)	67.56(7)		AL entry--Reduction
84	131.88	126.00(65)	142.92(17)			
83	127.07	125.86(50)	123.31(30)			PI entry--Reduction
82	153.43		149.68(72)		$161.74(13)	

Table III-3.2
Page 1 of 3

Charlotte Markets
Comparison of Average Parts with Entry/Exit of Competitors
1982 - 1988

Charlotte-Miami

3rd Qtr	Average P a r e	P I	EA	PA	
88	$104.12	$107.25(64)	$ 98.59(15)	$ 94.00(18)	PA **entry--PA's** low fare is offset by **PI's** fare increase with dominant market share. PA entered with a single flight.
87	99.14	95.65(78)	98.97(16)		
86	106.96	104.23(56)	107.27(34)		PA exit--Increase
85	93.37	96.49(30)	95.51(32)	73.38(23)	PA entry--Reduction
84	132.59	123.06(30)	131.74(54)		
83	138.67	137.65(36)	127.91(44)		
82	130.34	125.27(25)	126.75(57)		

Charlotte-Newark

3rd Qtr	Average P a r e	P I	EA	PE	
88	$ 90.66	$ 90.81(94)			PE exit--Increase
87	DATA PROBLEM				
86	78.79	79.39(51)	$ 87.29(18)	$ 69.89(28)	
85	64.54	63.66(58)		55.55(26)	PE entry--Reduction
84	103.51	91.21(49)	115.18(44)		
83	123.49	114.67(48)	132.72(42)		
82	103.99	92.21(34)	108.76(57)		

Charlotte-Philadelphia

3rd Qtr	Average Fare a P I		EA		
88	$106.63	$102.29(83)			
87	90.93	88.11(79)		EA exit--Increase	
86	89.56	88.30(70)	S 89.61(23)		
85	91.42	88.42(58)	92.76(30)		
84	114.27	111.63(41)	114.59(50)		
83	112.71	101.22(46)	127.16(42)		
82	120.87	95.77(35)	133.65(52)	PI/EA compete for share until PI achieves dominance and EA exits.	

Table III-3.2
Page 2 of 3

Charlotte Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Charlotte-Washington

3rd Qtr	Average Fare	PI	EA	
88	$ 90.16	$ 88.74(92)		
87	78.67	76.23(89)		EA exit--Reduction. Increased in 88.
86	87.43	87.70(65)	S 85.83(27)	
85	82.89	84.08(52)	83.79(36)	
84	91.37	93.08(41)	110.44(24)	
83	102.08	94.97(48)	102.55(40)	
82	88.42	84.37(36)	88.88(53)	PI/EA compete price down until PI achieves dominance.

Table III-3.2
Page 3 of 3

Table III-4.1

Phoenix Markets
Selected Fare Comparisons

	88 vs 87	88 vs 86	Percent Change 88 vs Post 84 Low (Year)		88 Actual vs 88 Average*	Entry
Denver	14	55	55	(86)	1	X 1/
Dallas	19	24	38	(85)	34	X
Houston	18	55	55	(86)	13	(60) 2/
Kansas City	17	9	17	(87)	(21)	X
Las Vegas	11	7	11	(87)	(46)	X
Los Angeles	14	15	15	(86)	(45)	X
Minneapolis	6	8	8	(86)	(4)	3/
San Diego	6	2	6	(87)	(47)	X
San Francisco	6	4	6	(87)	(18)	X
Seattle	14	(2)	14	(87)	5	4/
St. Louis	(9)	9	9	(86)	(12)	X
Salt Lake City	40	42	42	(86)	13	X

* The average is based on a straight-line regression for large hub-to-large hub city-pair markets.

1/ Two hubbing carriers added service (CO and HP), and two carriers terminated service (FL and WN).
2/ Joining another hubbing carrier.
3/ CO and BN added on-line connecting service and RC was merged into NW.
4/ AS and HP added service and PS terminated service.

SOURCE: Table III 4.2

Phoenix Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Phoenix-Denver

3rd Qtr	Average Fare	UA	CO	BP	FL	WN	
88	$ 95.77	$ 99.88(20)	$ 93.68(43)	$ 88.49(29)			Accommodation
87	83.89	85.53(27)	81.65(34)	78.77(27)			FL/WN exit, HP entry--Increase by hubbing carrier.
86	61.78	61.17(41)			$ 59.63(17)	$ 58.06(21)	CO exit--Decrease fares held down by WN and FL's last stand.
85	66.92	70.24(12)	73.58(21)		69.85(25)	54.06(31)	
84	53.58	54.77(17)	53.96(17)		52.43(26)	49.00(26)	CO enters--Reduction
83	78.90	76.51(28)		UA	78.10(40)	74.59(8)	WN enters--Reduction
82	120.73	114.70(15)	119.14(12)	117.93(38)	120.60(14)		

Phoenix-Dallas

3rd Qtr	Average Fare	AA	DL	BN	
88	$156.52	$169.99(34)	$171.47(18)	$131.52(35)	
87	131.22	135.56(40)	141.35(18)	112.17(29)	
86	125.64	133.91(22)	141.60(22)	108.63(41)	Continuous increases thru 88 with same 3 competitors.
85	112.80	132.51(13)	118.50(9)	99.97(66)	
84	117.44	113.94(47)	124.46(16)	109.79(22)	BN entry--Reduction
83	167.38	163.99(58)	161.63(29)		
82	169.73	170.86(56)	199.68(12)		

Phoenix-Houston

3rd Qtr	Average Fare	WN	CO	EA	RC	
88	$136.31	$145.33(56)	$120.61(37)			
87	115.55	107.66(61)	123.09(31)			CO entry--CO did not reenter as low-fare carrier, allowing price increases.
86	87.95	85.37(86)				CO exit--Little change to average fare despite WN's $9 increase.
85	89.83	74.69(60)	106.98(29)			EA/RC exit--Reduction as WN/CO compete for market share.
84	98.72	108.49(44)	81.49(23)	$ 87.45(10)	$ 93.66(15)	CO low-fare entry--Reduction
83	130.12	102.55(48)		152.19(11)	147.44(27)	CO exit--Increase
82	102.15	91.74(22)	102.54(26)	92.34(12)	93.79(26)	

Table III-A-4.
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Phoenix Markets
Comparison of Average Fare with Entry/Exit of Competitors
1982 - 1988

Phoenix-Kansas City

3rd Qtr	Average Fare	BN	EA	WN	HP	TW	RC	
88	$101.38	$ 81.69(24)	$ 86.46(33)	$141.35(26)				Accommodation
87	86.36	85.63(19)	73.76(48)	102.67(23)				WN entry--Reduction
86	92.97	90.17(33)	90.09(35)	94.73(19)				HP exit, BN entry--Increase
85	107.60	102.24(29)	109.26(33)					EA/HP entry--Reduction
84	90.71		85.56(16)		$ 92.81(23)	S 85.54(21)	S 92.72(14)	
83	116.47					109.94(47)	117.10(21)	
82	125.48					121.95(51)	124.16(16)	

Phoenix-Las Vegas

3rd Qtr	Average Fare	WN	HP	RC	UA	
88	$ 39.76	$ 43.55(54)	S 35.46(42)			Very competitive market with very little change in price over the seven-year period.
87	35.81	36.74(14)	35.63(80)			
86	37.12	37.79(14)	36.60(75)			
85	39.18	39.00(30)	38.98(53)			
84	39.85	39.00(38)	38.92(30)	$ 44.29(15)		
83	38.31	36.73(30)		46.52(29)	$ 34.26(14)	
82	37.21	34.89(23)		38.62(39)	41.00(13)	

Phoenix-Los Angeles

3rd Qtr	Average Rate	PS	HP	WN	RC	UA	
88	$ 44.83		$ 45.98(61)	$ 44.61(32)			PS exits--Increase
87	39.16	$ 42.48(8)	39.61(60)	38.33(15)			
86	39.03	38.92(100)	40.77(60)	30.30(19)			
85	44.05	44.17(13)	42.04(56)	39.00(13)			
84	50.22	46.25(20)	38.91(20)	39.00(21)	$ 77.34(17)	$ 47.21(11)	
83	49.35	43.96(30)		40.62(20)	62.41(31)	43.10(12)	WN enters-Reduction
82	59.32	51.08(21)			68.44(25)	59.51(19)	

Table III-4.2
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Phoenix-Minneapolis

3rd Qtr	Average Pare	N W	RC	CO	BN	
88	$139.07	$153.46(59)		$111.22(14)	$105.36(8)	**CO/BN** enter (w/connecting service)--Increase, as large increase by hub dominant carrier offsets low-fare entry.
87	131.78	146.66(56)		100.44(9)	93.86(23)	
86	129.09	124.37(48)	$130.38(26)			**NW/RC** compete for dominance at **MSP.**
85	148.63	148.41(28)	152.85(23)	132.25(16)		
84	157.50	152.44(36)	153.22(29)	147.59(131)		CO enters--Reduction
83	183.42	173.08(37)	176.15(42)		UA	UA exits--Increase
82	165.96	157.11(39)	174.40(23)		s 139.97(10)	

Phoenix-San Diego

3rd Qtr	Average Pare	WN	HP	PS	DL	
88	s 40.95	$ 47.44(50)	s 34.49(41)			Fares in this market have remained very competitive throughout the seven-year period.
87	38.80	37.27(31)	39.75(59)			
86	40.10	37.80(27)	40.54(62)			
85	40.84	39.00(23)	38.66(40)	$ 44.33(19)		
84	40.11	39.00(29)	38.82(22)	41.71(17)	s 39.52(9)	
83	40.85	42.24(29)		40.90(43)	35.40(3)	
82	35.38	36.23(24)		35.19(45)	32.94(20)	

Phoenix-San Francisco

3rd Qtr	Average Pare	AL/PS	UA	HP	WN	AA	
88	$ 83.13	$ 69.94(20)	$ 73.44(20)	$ 88.94(29)	$ 89.42(20)		
87	78.21	88.79(25)	75.54(24)	69.29(36)	78.93(9)		
86	79.66	91.78(18)	77.55(15)	74.14(32)	74.26(7)	$ 74.42(14)	AA enters-Reduction
85	84.39	83.19(12)	87.36(26)	76.42(31)	75.00(10)	RC	RC exits--Increase
84	73.91	72.17(9)	72.89(20)	74.51(10)	72.69(5)	$ 72.03(24)	
83	71.30	69.62(8)	69.48(27)		65.96(15)	71.58(33)	**WN** enters--Reduction
82	77.43	69.65(11)	76.87(19)			75.65(32)	

Phoenix Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Phoenix-Seattle

3rd Qtr	Average Fare	UA	WA	AS	BP	PS	NW	RC	
88	$140.68			$141.44(44)	$132.86(37)				AS enters/UA & PS exit--Increase
87	123.37	$112.20(9)			106.11(61)	$191.18(10)			HP enters--Reduction
86	143.83	124.94(24)	$128.20(19)			161.77(37)			PS enters--Reduction
85	148.79	153.36(11)	150.79(12)	132.33(27)	WC		$139.88(11)		
84	155.93	142.89(16)	164.61(14)		$146.53(17)		142.75(7)	$153.35(18)	
83	143.80	135.71(27)	142.66(14)					141.75(36)	
82	143.70	139.62(19)	136.53(25)					145.90(30)	

Phoenix-St Louis

3rd Qtr	Average Pare	TW	WN	FL	RC	
88	$127.90	$110.60(58)	$156.66(32)			Reduction as TW competes *for* market *share*
87	140.12	153.84(39)	125.49(53)			
86	117.14	140.75(33)	92.38(47)			WN entry--Reduction
85	161.52	160.74(30)		$164.50(16)	$152.49(12)	FL/RC entry--Reduction
84	188.01	193.59(67)				
83	166.21	161.91(86)				
82	191.06	182.91(72)				

Phoenix-Salt Lake City

3rd Qtr	Average Pare	DL/WA	HP	RC	
88	$102.86	$112.55(33)	$ 96.37(64)		Accommodation as HP dominance increases.
87	73.63	76.69(38)	69.80(52)		
86	72.28	73.38(43)	69.43 (45)		
85	86.77	87.24(52)	84.85(45)		HP entry--Reduction
84	123.60	126.28(63)			RC exit--Increase
83	112.56	110.41(76)		$118.26(11)	
82	105.58	111.35(38)		101.92(51)	

SOURCE: Origin-Destination Survey of Airline Passenger Traffic. Data Bank IV, filtered.

Table III-4.2
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Table III-5.1

Dallas Markets
Selected Fare Comparisons

| | Percent Change | | | | |
	88 vs 87	88 vs 86	88 vs Post 84 Low (Year)	88 Actual vs 88 Average*	Entry
Atlanta	(8)	(2)	2 (85)	17	(BN)
Chicago	1	13	13 (86)	23	X
Charlotte	15	11	15 (87)	22	(DL/EA) 1/
Denver	(25)	24	24 (86)	(2)	(BN/CO)
Detroit	13	12	13 (87)	23	X
Houston	9	17	18 (85)	(26)	X
Kansas City	(2)	34	48 (85)	28	X
Las Vegas	15	14	15 (87)	--	X
Los Angeles	21	25	32 (85)	33	X
Miami	3	3	3 (87)	--	(PA)
Minneapolis	(17)	(2)	2 (85)	17	(BN) 1/
Orlando	(6)	7	7 (86)	1	(BN)
Philadelphia	2	(1)	12 (85)	20	(AA) 1/
Phoenix	19	25	39 (85)	34	X
Pittsburgh	14	1	14 (87)	4	X
St. Louis	(4)	14	18 (85)	25	(BN/CO) 1/
Salt Lake City	(3)	13	13 (86)	26	(CO/UA) 1/
San Diego	2	15	15 (86)	14	(CO) 1/
Tampa	(5)	8	8 (86)	15	(CO) 1/
Washington	21	21	32 (85)	27	X

* The average is based on a straight-line regression for large
  hub-to-large hub city-pair markets.

1/ On-line connecting service. Hubbing carriers have frequent
   non-stop service.

SOURCE: Table 5.2

Dallas Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Dallas-Atlanta

3rd Qtr	Average Fare	BA	AA	EA	BN	
88	$124.83	$121.98(65)	$127.95(155)	$113.78(111)	$135.55(3)	BN entry--Reduction
87	135.66	135.28(64)	139.75(18)	124.27(12)		
86	127.03	123.20(58)	134.94(19)	116.55(12)		CO exit--Increase
85	122.79	126.00(47)	117.19(19)	112.41(10)	$113.21(11)	CO entry--Reduction
84	156.51	155.01(62)	158.29(17)	151.53(6)		
83	154.84	154.37(63)	149.54(21)	153.28(5)		AA entry--Reduction
82	164.34	166.64(63)		168.16(13)		

Dallas-Chicago

3rd Qtr	Average Fare	AA	ML	UA	DL	BN	
88	$137.28	$144.80(36)	$130.62(24)	$159.18(5)	$131.66(11)	$118.85(17)	Price escalates over a 4-yr period with 5 competitors but no entry.
87	136.71	141.02(42)	127.71(15)	136.17(5)	130.62(11)	118.87(15)	
86	121.04	135.87(29)	102.17(25)	129.70(9)	123.02(8)	106.99(13)	
85	121.17	131.03(29)	120.87(21)	124.23(7)	126.34(6)	98.05(22)	
84	119.79	119.33(39)	114.30(24)	121.01(7)	112.34(8)	111.53(12)	BN entry--Reduction
83	130.68	144.53(41)	93.50(22)	131.39(8)	127.88(15)		DL entry--Reduction
82	134.43	150.56(51)	99.00(25)	126.33(6)			

Dallas-Charlotte

3rd Qtr	Average Fare	PI	AA	DL	EA	
88	$148.10	$149.59(53)	$159.57(20)	$125.35(11)	$124.76(8)	Accommodation
87	128.82	117.82(48)	145.91(21)	115.69(15)	112.07(7)	DL/EA entry--Reduction
86	132.94	122.27(54)	153.91(20)			
85	147.92	139.25(36)	148.03(37)			AA entry--Reduction
84	163.02	160.49(53)		166.98(7)	156.19(9)	
83	159.20	152.08(72)		166.62(7)	150.21(7)	
82	171.46	168.67(62)		163.79(9)	149.09(14)	

Table III-5.2
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Dallas Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988 -

Dallas-Denver

3rd Qtr	Average Fare	AA	DL	UA	FL	BN	CO	
88	$ 99.08	$108.21(36)	S 89.38(22)	$101.30(8)		$ 67.66(13)	$101.85(15)	BN entry--Reduction
87	132.11	128.17(35)	129.23(20)	138.58(17)			119.93(16)	CO enters--Increase as all non-hubbing competition gone.
86	80.10	76.97(35)	80.12(21)	79.23(15)	s 74.91(9)			Price drops with FL's last stand.
85	110.67	110.18(23)	114.19(12)	115.41(10)	113.52(12)	94.70(25)		
84	105.01	103.35(24)	106.35(16)	96.37(12)	111.68(8)	96.01(23)		BN entry--Reduction
83	141.45	138.85(32)	139.45(29)	142.31(11)	141.83(13)			Price escalates with four competitors.
82	78.45	74.21(27)	76.08(26)	70.28(15)	86.19(13)			

Dallas-Detroit

3rd Qtr	Average Fare	AA	DL	NW/RC	ML	BN	
88	$153.38	$161.57(41)	$144.48(23)	$146.52(15)			Accommodation--Non-hubbing carrier's gone, and all hub carriers show large fare increase.
87	136.26	133.84(35)	139.33(23)	125.00(17)			
86	137.50	148.56(32)	130.37(19)	136.73(10)	$104.98(5)		
85	137.37	143.98(36)	122.61(17)	137.38(10)	109.64(13)		DL & NW/RC entry, BN exit--Reduction
84	142.21	135.67(50)			157.58(8)	$130.45(16)	BN entry/DL exit--Little change
83	144.07	151.32(49)	137.66(15)	02	114.50(19)		ML entry--Reduction
82	191.52	203.87(56)	200.19(5)	$144.02(12)			

Dallas-Houston

3rd Qtr	Average Fare	AA	WN	NC	
88	$ 52.89	$ 50.02(19)	S 53.38(67)		
87	48.38	42.59(17)	49.77(66)		MC exit--Increase
86	45.30	44.11(16)	45.12(53)	$ 44.94(22)	
85	44.80	50.06(11)	41.57(54)	47.90(23)	
84	36.40	32.70(9)	38.62(44)	36.72(28)	Fares initially decline with three-way competition for market share, then escalate through 86.
83	39.48	45.12(12)	38.68(50)	38.25(34)	
82	29.09	52.28(6)	33.04(43)	19.63(45)	

Table III-5.2
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Dallas Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Dallas-Kansas City

3rd Qtr	Average Fare	AA	DL	BN	TW	
88	$112.45	$115.60(33)	$110.36(24)	$106.35(35)		
87	115.24	119.80(32)	117.50(25)	97.22(25)		
86	83.64	86.37(35)	80.39(18)	75.35(21)		BN entry--Increase?
85	76.19	69.94(44)	74.12(32)			
84	106.61	107.71(38)	115.45(16)	93.27(24)		BN entry--Decrease
83	122.28	119.74(54)	124.35(25)			TW exit--Increase
82	75.38	75.94(53)	68.73(8)		S 69.05(23)	

Dallas-Las Vegas

3rd Qtr	Average Fare	AA	DL	BN	SI	
88	$129.21	$143.04(37)	$144.33(12)	$112.71(48)		SI exit--Increase
87	112.55	116.97(26)	126.62(13)	102.27(44)	$103.66(9)	
86	113.52	134.76(14)	125.51(8)	110.55(50)	85.42(17)	SI entry--Reduction
85	117.49	132.41(19)	123.34(10)	108.81(59)		
84	118.62	118.42(34)	119.66(28)	107.75(291)		BN entry--Reduction
83	154.56	163.63(37)	145.29(47)			Fares escalate until BN enters.
82	138.38	148.65(38)	129.37(50)			

Dallas-Los Angeles

3rd Qtr	Pare	AA	BN	DL	SI	
88	$188.05	$213.11(40)	$152.40(22)	$178.20(23)		SI exit-- Increase
87	156.22	165.18(41)	138.51(13)	158.48(17)	$129.42(16)	Price escalates with same fare carriers through 1987.
86	150.85	167.69(27)	143.34(15)	154.64(13)	129.86(26)	
85	143.00	154.66(20)	127.63(21)	146.14(7)	137.94(39)	
84	143.66	148.84(37)	129.35(12)	148.82(14)	138.30(22)	DL entry--Reduction
83	201.75	223.74(37)	214.68(21)		154.97(32)	SI entry--Increase until AA/BN react in 84.
82	158.34	184.12(31)	130.94(43)			

Table III-5.2
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Dallas **Markets**
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Dallas-Miami

3rd Qtr	Average Fare	AA	DL	BN	PA	EA	
88	$134.28	$140.65(29)	$135.59(24)	$125.63(38)	$110.78(24)		
87	129.94	137.98(34)	131.11(23)	104.40(18)	106.27(7)		**EA** exit/PA entry--No change
86	130.83	138.88(32)	133.20(15)	116.57(22)		$119.09(13)	Price decreases with four-carrier competition for market share.
85	141.60	163.31(19)	160.46(7)	114.81(28)		130.23(18)	
84	145.60	143.71(31)	165.38(12)	125.65(22)		148.63(11)	**BN** entry--Reduction
83	157.43	155.81(45)	157.87(28)			144.14(12)	Price escalates with same three competitors.
82	148.50	162.46(29)	140.17(27)			129.94(28)	

Dallas-Minneapolis

3rd Qtr	Average Fare	AA	NW	WC	BN	OZ	
88	$135.29	$137.88(29)	$132.83(39)		$127.18(15)		Reduction as AA/NW react to **BN's** low fares.
87	162.92	177.63(28)	175.39(31)		111.90(13)		**RC exit/BN entry--Increase** as large increase by hubbing carriers offset **BN's** low fares.
86	138.16	140.53(31)	129.39(19)	$138.37(11)			
85	133.23	133.25(35)	127.63(16)	132.80(15)	CO		**CO/OZ** exit--Reduction as hubbing carriers continue to compete at CO induced fare level.
84	158.43	174.81(20)	162.34(18)	136.29(20)	$137.09(11)	$155.99(11)	**CO/OZ** entry--Increase as large increase by hubbing carriers offset **CO's** new lower fares,
83	151.52	158.25(36)	140.83(34)	137.55(6)			Fares escalate with same competitors.
82	120.23	155.13(26)	93.03(39)	89.92(16)			

Dallas-Orlando

3rd Qtr	Average Fare	AA	DL	CO	BN	EA	
88	$125.48	$138.00(16)	$133.70(31)	$134.82(5)	$113.09(38)		Decrease as **BN** enters with low fares.
87	133.96	138.60(20)	126.01(58)	126.38(11)		$ 98.39(11)	Increase as **DL** retains dominant share with higher fare.
86	117.39	133.01(19)	113.40(58)				Reduction as **AA/DL** continue to compete at CO induced fares.
85	122.42	130.22(22)	106.12(39)	139.13(25)			Reduction as **AA/DL** react to CO.
84	148.95	156.01(28)	158.15(27)	130.36(24)			CO entry--Small decrease as hub carriers raise price.
83	150.74	150.15(34)	146.63(47)				
82	162.41	167.61(41)	155.98(32)				

Dallas **Markets**
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Dallas-Philadelphia

3rd Qtr	Average Fare	AA	DL	AL	ML	
88	$177.31	$201.09(119)	$193.11(188)	$156.82(9)	$164.57(13)	Accommodation
87	173.12	179.39(25)	173.44(17)	164.24(11)	153.10(7)	**AL** entry--Reduction
86	179.63	189.58(44)	166.11(24)		137.62(4)	Price rises due to large increase by hub carriers.
85	159.02	168.54(29)	152.05(19)	**BN**	168.32(9)	**ML** entry--Reduction
84	163.73	156.64(40)	165.97(19)	$143.31(14)		**BN** entry--Reduction
83	196.83	221.28(61)	168.85(5)			
82	195.08	196.52(71)	171.30(5)			

Dallas-Phoenix

3rd Qtr	Average Fare	AA	DL	BN	
88	$156.52	$169.99(34)	$171.47(18)	$131.52(35)	
87	131.22	135.56(40)	141.35(18)	112.17(29)	
86	125.64	133.91(22)	141.60(22)	108.63(41)	Continuous increases through **88** with same 3 competitors.
85	112.80	132.51(13)	118.50(9)	99.97(6)	
84	117.44	113.94(47)	124.46(16)	109.79(22)	**BN** entry A-Reduction
83	167.38	163.99(58)	161.63(29)		
82	169.73	170.86(56)	199.68(12)		

Dallas-Pittsburgh

3rd Qtr	Pare	AA	AL	CO	
88	$136.46	$138.49(45)	$127.52(35)		CO exit--Increase
87	119.33	118.08(52)	114.26(33)	$ 91.98(6)	CO entry--Reduction
86	134.94	129.39(46)	129.50(28)		
85	130.57	125.39(52)	129.23(20)	PI	PI exit--Reduction as AA/AL compete for share.
84	193.81	202.07(39)	182.15(29)	$175.08(14)	
83	198.46	204.70(55)	191.53(15)	134.58(10)	PI entry--Reduction following year.
82	195.40	193.30(61)	190.17(19)		

Table III-5.2
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Dallas-St. Louis

3rd Qtr	Average Fare	AA	TW/OZ	CO	BN	SI	
88	$118.05	$125.25(34)	$114.06(32)	$95.06(17)	$136.06(10)		BN/CO entry, SI exit--Reduction
87	122.61	133.57(27)	129.49(35)			$95.62(27)	Increase as **hubbing** carriers increase price and gain market share.
86	103.45	129.11(10)	113.34(15)			90.00(54)	
85	100.14	122.42(17)	117.24(18)			81.88(42)	
84	104.67	103.34(33)	113.85(30)			86.55(15)	**SI** entry--Reduction
83	115.43	127.21(24)	114.18(55)				
82	107.19	118.04(32)	95.65(56)				

Dallas-Salt Lake City

3rd Qtr	Average Fare	AA	DL	WA	CO	UA	FL	
88	$158.13	$162.57(14)	$182.58(38)		$129.05(29)	$126.22(14)		Reduction as AA reacts to continued low fares of CO & UA entry.
87	163.86	178.77(21)	179.77(35)		116.90(23)			WA/FL exit, CO entry--Increase as **hubbing** carriers push fares up despite CO low fare entry.
86	139.56	131.70(30)	137.78(7)	$154.20(26)			$109.98(6)	
85	141.02	122.57(30)	121.09(6)	139.01(19)			158.15(20)	Reduction as **hub** carriers react to FL.
84	169.26	165.42(30)	170.69(7)	170.68(18)			162.61(14)	FL entry--Competitive reaction **not** immediate **but** fares drop sharply later
83	160.99	150.31(42)	164.01(15)	160.92(25)				Price escalates as same three carriers compete.
82	116.11	109.16(53)	102.85(11)	116.64(19)				

Table III-5.2
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Dallas Markets
Comparison of Average Fares with Entry/Exit of Competitors
1982 - 1988

Dallas-San Diego

3rd Qtr	Average Fare	AA	DL	BN	CO	FL	
88	$167.85	$167.39(32)	$178.67(21)	$153.98(12)	$157.08(25)		Accommodation as **nonhub** carriers raise price.
87	164.96	171.17(22)	182.04(23)	144.11(17)	145.87(23)		FL exit--Increase
86	146.48	152.18(27)	154.31(26)	123.91(7)		$129.49(10)	**BN** entry/CO exit--Reduction due to FL last gasp.
85	150.80	152.15(38)	134.83(17)		150.46(16)	159.95(9)	Reduction as hub carriers react to CO/FL entry.
84	183.84	200.58(38)	198.69(18)		145.60(12)	141.00(12)	CO/FL entry--Reduction
83	187.01	182.89(54)	186.27(33)				
82	206.76	212.59(63)	210.71(15)				

Dallas-Tampa

3rd Qtr	Average Fare	AA	DL	CO	
88	$139.58	$141.83(31)	$138.17(45)	$129.40(15)	Reduction as CO reduces price to gain share of market.
87	146.76	143.45(39)	140.05(41)	135.63(9)	CO entry--Increase as hub carriers increase price.
86	129.02	131.17(27)	126.81(53)		CO exit--Reduction as **AA/DL** compete for CO's market share.
85	134.36	130.98(28)	126.53(28)	143.34(31)	
84	158.55	175.44(23)	179.67(23)	129.32(38)	CO entry--Reduction, mostly delayed until 85.
83	160.30	158.51(31)	156.53(52)		
82	156.13	152.43(53)	155.16(26)		

Dallas-Washington

3rd Qtr	Average Fare	AA	DL	BN	PI	ML	
88	$177.35	$202.42(41)	$178.37(20)	$123.65(18)			Accommodation
87	145.82	152.01(36)	145.53(23)	118.40(18)			
86	145.24	152.66(40)	134.59(17)	128.47(16)			PI exit--Increase
85	134.05	136.55(27)	139.61(44)	129.78(38)	$105.64(7)		
84	156.75	154.57(43)	156.12(4)	145.83(25)	140.38(4)		**BN** entry--Reduction
83	164.51	172.81(51)	166.61(9)		140.27(11)	$115.00(10)	**DL/ML** entry-Reduction
82	195.87	208.10(71)			110.97(8)		

SOURCE: Origin-Destination Survey of Airline Passenger Traffic, Data Bank IV, filtered.

PART IV
REVENUE MANAGEMENT SYSTEMS

Increasingly in recent years, airlines have been developing and using highly sophisticated computer programs, known as revenue management systems (RMS), to help manage their seat inventories. Some have argued that these systems are anticompetitive. A review of these systems and their operation, however, leads to the opposite conclusion, i.e., revenue management systems are pro-competitive.1/

Revenue management systems aid in the management of two forces. First, RMS limits the potential waste that arises because passenger demand for seats is uncertain within a flight leg. Second, RMS increases the ability of airline management to control the true origin and destination composition of passengers flowing over a flight leg. Under changing demand and cost conditions, RMS reallocates seats from lower valued uses to higher valued uses. The resulting revenue increases are measures of the social gains from RMS.

While the industry uses a number of different approaches to seat inventory management with varying degrees of sophistication, the common objective is to minimize the chance of under- or over-sale of certain fare classes. This problem is particularly acute in advance reservation industries like airlines because as a commodity an empty aircraft seat "perishes" once the aircraft takes off. Revenue management is nothing more than a method aimed at limiting this "spoilage" of unused seats. Moreover, the theory of RMS is continually evolving as the airline industry changes.

To date, studies of revenue management systems reveal that while optimal seat inventory levels exist in theory, in practice they are difficult to implement. Implementation difficulties are related to the shift from point-to-point itineraries to hub-and-spoke itineraries. With point-to-point, controlling seat inventories by true origin and destination was effectively simplified to controlling availability by fare class since a passenger's itinerary was typically the same as the flight leg endpoints. With hub-and-spoke, origin and destination control is greatly complicated by the variety of passenger itineraries within a flight leg. Furthermore, the cost of implementing certain methods of seat inventory control inhibits the ability to control availability by true origin and destination. Therefore, different carriers have tried to use different methods to control seat inventories.

1/ The findings and conclusions set out in this part are based upon a separate analysis: Maynes, Stewart G. "A Competitive Analysis of Air Carrier Revenue Management Systems", U.S. Department of Transportation, Washington, D.C., December 1989.

The argument that revenue management systems are procompetitive centers on how they are used to manage uncertainty and allocate seats to their highest and best use. One study that compared manual methods of seat inventory control to an automated RMS found that RMS produced flight revenues 6.1% higher than the manual methods. Moreover, flight leg load factors were 10.2% higher, and there was 12% more passengers and 11.7% more revenue passenger miles than under manual methods. Thus, average seat price tends to decline with the adoption of revenue management systems. Two studies of RMS control techniques show that the savings from improved automated methods of inventory control can be substantial.

Anticompetitive theories of revenue management systems appear to be without merit. RMS is not a barrier to price generated entry because the ready availability of seat inventory management systems in the public domain serves to reduce the uncertainty, and hence the risk, of new entry rather than to increase it. Also RMS reduces a competing carrier's ability to detect secret seat availability increases and thereby reduces the likelihood of tacit cartel behavior because one competitor's seat availability is unknown to other carriers and is constantly changing. Predation is an unlikely by-product of RMS because such systems are designed to minimize the large, loss-inducing discount sales that such a tactic requires. Moreover, an anti-predation policy would be virtually impossible to administer under the conditions of joint supply that prevail in the airline industry. Finally, RMS is unlikely to impose substantial passenger search costs relative to the gains to be realized from varying seat availability in the face of uncertain demand.

Thus, on the basis of available evidence revenue management must be viewed as a method of improving competition for a number of reasons. First, although the amount of evidence is limited, that which is available indicates that market performance under RMS is preferable to methods of manual control. Second, the device of revenue management is unlikely to aid a tacit cartel because carriers differ in the type of RMS they use, and because RMS is least likely to be a factor precisely in those instances where competition is weakest.
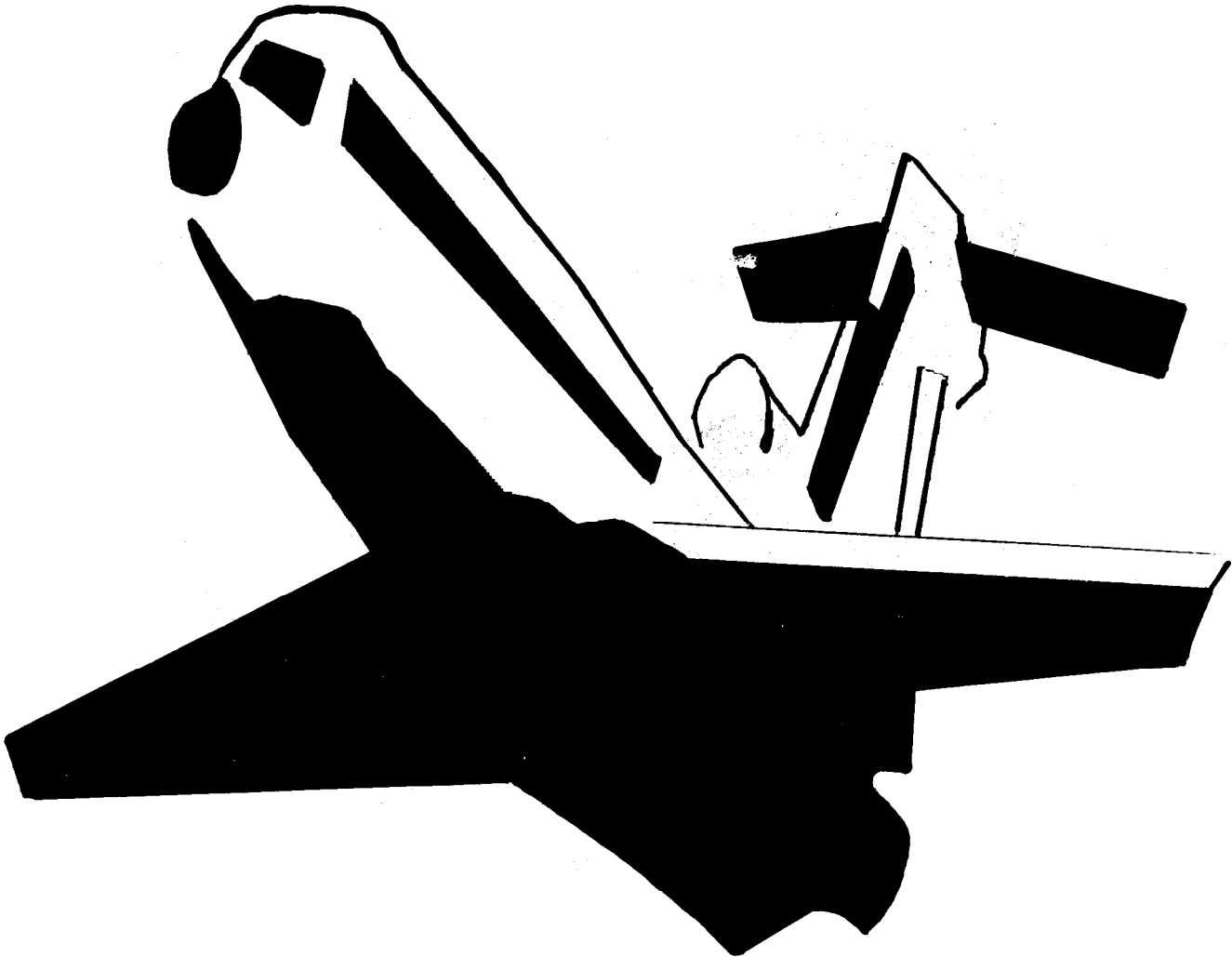
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